SEQUENCE LISTING

<110> The University of North Carolina
Threadgill, David W
Lee, Daekee

<120> MODULATION OF EPIDERMAL GROWTH FACTOR HETERODIMER ACTIVITY

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<170> PatentIn version 3.3

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Leu Ala Ala Leu Cys Pro Ala Ser Arg Ala Leu Glu Glu Lys Lys Val
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Thr Val Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn
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Met Tyr Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp
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gca aat aaa acc gga ctg aag gag ctg ccc atg aga aat tta cag gaa      672
Ala Asn Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu
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Ile Leu His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn
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gtg gag agc atc cag tgg cgg gac ata gtc agc agt gac ttt ctc agc      768
Val Glu Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser
    160                 165                 170

aac atg tcg atg gac ttc cag aac cac ctg ggc agc tgc caa aag tgt      816
Asn Met Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys
175                 180                 185                 190

gat cca agc tgt ccc aat ggg agc tgc tgg ggt gca gga gag gag aac      864
Asp Pro Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn
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Cys Gln Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg
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Cys Arg Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala
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ggc tgc aca ggc ccc cgg gag agc gac tgc ctg gtc tgc cgc aaa ttc     1008
Gly Cys Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe
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cga gac gaa gcc acg tgc aag gac acc tgc ccc cca ctc atg ctc tac     1056
Arg Asp Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr
255                 260                 265                 270

aac ccc acc acg tac cag atg gat gtg aac ccc gag ggc aaa tac agc     1104
Asn Pro Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser
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ttt ggt gcc acc tgc gtg aag aag tgt ccc cgt aat tat gtg gtg aca     1152
Phe Gly Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr
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aaa gtg tgt aac gga ata ggt att ggt gaa ttt aaa gac tca ctc tcc     1296
Lys Val Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser
335                 340                 345                 350

ata aat gct acg aat att aaa cac ttc aaa aac tgc acc tcc atc agt     1344
Ile Asn Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser
                355                 360                 365

ggc gat ctc cac atc ctg ccg gtg gca ttt agg ggt gac tcc ttc aca     1392
Gly Asp Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr
            370                 375                 380

cat act cct cct ctg gat cca cag gaa ctg gat att ctg aaa acc gta     1440
His Thr Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val
        385                 390                 395

aag gaa atc aca ggg ttt ttg ctg att cag gct tgg cct gaa aac agg     1488
Lys Glu Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg
    400                 405                 410

acg gac ctc cat gcc ttt gag aac cta gaa atc ata cgc ggc agg acc     1536
Thr Asp Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr
415                 420                 425                 430

aag caa cat ggt cag ttt tct ctt gca gtc gtc agc ctg aac ata aca     1584
Lys Gln His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr
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tcc ttg gga tta cgc tcc ctc aag gag ata agt gat gga gat gtg ata     1632
Ser Leu Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile
            450                 455                 460

att tca gga aac aaa aat ttg tgc tat gca aat aca ata aac tgg aaa     1680
Ile Ser Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys
        465                 470                 475

aaa ctg ttt ggg acc tcc ggt cag aaa acc aaa att ata agc aac aga     1728
Lys Leu Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg
    480                 485                 490

ggt gaa aac agc tgc aag gcc aca ggc cag gtc tgc cat gcc ttg tgc     1776
Gly Glu Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys
495                 500                 505                 510

tcc ccc gag ggc tgc tgg ggc ccg gag ccc agg gac tgc gtc tct tgc     1824
Ser Pro Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys
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cgg aat gtc agc cga ggc agg gaa tgc gtg gac aag tgc aac ctt ctg     1872
Arg Asn Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu
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gag ggt gag cca agg gag ttt gtg gag aac tct gag tgc ata cag tgc     1920
Glu Gly Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys
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cac cca gag tgc ctg cct cag gcc atg aac atc acc tgc aca gga cgg     1968
His Pro Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg
    560                 565                 570

gga cca gac aac tgt atc cag tgt gcc cac tac att gac ggc ccc cac     2016
Gly Pro Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His
575                 580                 585                 590

tgc gtc aag acc tgc ccg gca gga gtc atg gga gaa aac aac acc ctg     2064
Cys Val Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu
                595                 600                 605

gtc tgg aag tac gca gac gcc ggc cat gtg tgc cac ctg tgc cat cca     2112
Val Trp Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro
            610                 615                 620

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        625                 630                 635

aat ggg cct aag atc ccg tcc atc gcc act ggg atg gtg ggg gcc ctc     2208
Asn Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly Ala Leu
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ctc ttg ctg ctg gtg gtg gcc ctg ggg atc ggc ctc ttc atg cga agg     2256
Leu Leu Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg
655                 660                 665                 670

cgc cac atc gtt cgg aag cgc acg ctg cgg agg ctg ctg cag gag agg     2304
Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg
                675                 680                 685

gag ctt gtg gag cct ctt aca ccc agt gga gaa gct ccc aac caa gct     2352
Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala
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ggc tcc ggt gcg ttc ggc acg gtg tat aag gga ctc tgg atc cca gaa     2448
Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu
    720                 725                 730

ggt gag aaa gtt aaa att ccc gtc gct atc aag gaa tta aga gaa gca     2496
Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala
735                 740                 745                 750

aca tct ccg aaa gcc aac aag gaa atc ctc gat gaa gcc tac gtg atg     2544
Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met
                755                 760                 765

gcc agc gtg gac aac ccc cac gtg tgc cgc ctg ctg ggc atc tgc ctc     2592
Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu
            770                 775                 780

acc tcc acc gtg cag ctc atc acg cag ctc atg ccc ttc ggc tgc ctc     2640
Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly Cys Leu
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ctg gac tat gtc cgg gaa cac aaa gac aat att ggc tcc cag tac ctg     2688
Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu
    800                 805                 810

ctc aac tgg tgt gtg cag atc gca aag ggc atg aac tac ttg gag gac     2736
Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp
815                 820                 825                 830

cgt cgc ttg gtg cac cgc gac ctg gca gcc agg aac gta ctg gtg aaa     2784
Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys
                835                 840                 845

aca ccg cag cat gtc aag atc aca gat ttt ggg ctg gcc aaa ctg ctg     2832
Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu
            850                 855                 860

ggt gcg gaa gag aaa gaa tac cat gca gaa gga ggc aaa gtg cct atc     2880
Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile
        865                 870                 875

aag tgg atg gca ttg gaa tca att tta cac aga atc tat acc cac cag     2928
Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln
    880                 885                 890

agt gat gtc tgg agc tac ggg gtg acc gtt tgg gag ttg atg acc ttt     2976
Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe
895                 900                 905                 910

gga tcc aag cca tat gac gga atc cct gcc agc gag atc tcc tcc atc     3024
Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser Ser Ile
                915                 920                 925

ctg gag aaa gga gaa cgc ctc cct cag cca ccc ata tgt acc atc gat     3072
Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp
            930                 935                 940

gtc tac atg atc atg gtc aag tgc tgg atg ata gac gca gat agt cgc     3120
Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg
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cca aag ttc cgt gag ttg atc atc gaa ttc tcc aaa atg gcc cga gac     3168
Pro Lys Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala Arg Asp
    960                 965                 970

ccc cag cgc tac ctt gtc att cag ggg gat gaa aga atg cat ttg cca     3216
Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro
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agt cct aca gac tcc aac ttc tac cgt gcc  ctg atg gat gaa gaa  gac   3264
Ser Pro Thr Asp Ser Asn Phe Tyr Arg Ala  Leu Met Asp Glu Glu  Asp
                995                 1000                1005

atg gac gac gtg  gtg gat gcc gac gag  tac ctc atc cca cag  cag      3309
Met Asp Asp Val  Val Asp Ala Asp Glu  Tyr Leu Ile Pro Gln  Gln
            1010                1015                1020

ggc ttc ttc agc  agc ccc tcc acg tca  cgg act ccc ctc ctg  agc      3354
Gly Phe Phe Ser  Ser Pro Ser Thr Ser  Arg Thr Pro Leu Leu  Ser
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tct ctg agt gca  acc agc aac aat tcc  acc gtg gct tgc att  gat      3399
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aga aat ggg ctg  caa agc tgt ccc atc  aag gaa gac agc ttc  ttg      3444
Arg Asn Gly Leu  Gln Ser Cys Pro Ile  Lys Glu Asp Ser Phe  Leu
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cag cga tac agc  tca gac ccc aca ggc  gcc ttg act gag gac  agc      3489
Gln Arg Tyr Ser  Ser Asp Pro Thr Gly  Ala Leu Thr Glu Asp  Ser
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ata gac gac acc  ttc ctc cca gtg cct  gaa tac ata aac cag  tcc      3534
Ile Asp Asp Thr  Phe Leu Pro Val Pro  Glu Tyr Ile Asn Gln  Ser
            1085                 1090                 1095

gtt ccc aaa agg  ccc gct ggc tct gtg  cag aat cct gtc tat  cac      3579
Val Pro Lys Arg  Pro Ala Gly Ser Val  Gln Asn Pro Val Tyr  His
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aat cag cct ctg  aac ccc gcg ccc agc  aga gac cca cac tac  cag      3624
Asn Gln Pro Leu  Asn Pro Ala Pro Ser  Arg Asp Pro His Tyr  Gln
            1115                 1120                 1125

gac ccc cac agc  act gca gtg ggc aac  ccc gag tat ctc aac  act      3669
Asp Pro His Ser  Thr Ala Val Gly Asn  Pro Glu Tyr Leu Asn  Thr
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gtc cag ccc acc  tgt gtc aac agc aca  ttc gac agc cct gcc  cac      3714
Val Gln Pro Thr  Cys Val Asn Ser Thr  Phe Asp Ser Pro Ala  His
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tgg gcc cag aaa  ggc agc cac caa att  agc ctg gac aac cct  gac      3759
Trp Ala Gln Lys  Gly Ser His Gln Ile  Ser Leu Asp Asn Pro  Asp
            1160                 1165                 1170

tac cag cag gac  ttc ttt ccc aag gaa  gcc aag cca aat ggc  atc      3804
Tyr Gln Gln Asp  Phe Phe Pro Lys Glu  Ala Lys Pro Asn Gly  Ile
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ttt aag ggc tcc  aca gct gaa aat gca  gaa tac cta agg gtc  gcg      3849
Phe Lys Gly Ser  Thr Ala Glu Asn Ala  Glu Tyr Leu Arg Val  Ala
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Gly Thr Ser Asn Lys Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe
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Leu Ser Leu Gln Arg Met Phe Asn Asn Cys Glu Val Val Leu Gly Asn
    50                  55                  60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys
65                  70                  75                  80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
                85                  90                  95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Met Tyr
            100                 105                 110

Tyr Glu Asn Ser Tyr Ala Leu Ala Val Leu Ser Asn Tyr Asp Ala Asn
        115                 120                 125

Lys Thr Gly Leu Lys Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
    130                 135                 140

His Gly Ala Val Arg Phe Ser Asn Asn Pro Ala Leu Cys Asn Val Glu
145                 150                 155                 160

Ser Ile Gln Trp Arg Asp Ile Val Ser Ser Asp Phe Leu Ser Asn Met
                165                 170                 175

Ser Met Asp Phe Gln Asn His Leu Gly Ser Cys Gln Lys Cys Asp Pro
            180                 185                 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Ala Gly Glu Glu Asn Cys Gln
        195                 200                 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser Gly Arg Cys Arg
    210                 215                 220

Gly Lys Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys
225                 230                 235                 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Arg Lys Phe Arg Asp
                245                 250                 255
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Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro
            260                 265                 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly
        275                 280                 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His
    290                 295                 300

Gly Ser Cys Val Arg Ala Cys Gly Ala Asp Ser Tyr Glu Met Glu Glu
305                 310                 315                 320

Asp Gly Val Arg Lys Cys Lys Lys Cys Glu Gly Pro Cys Arg Lys Val
                325                 330                 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Ser Leu Ser Ile Asn
            340                 345                 350

Ala Thr Asn Ile Lys His Phe Lys Asn Cys Thr Ser Ile Ser Gly Asp
        355                 360                 365

Leu His Ile Leu Pro Val Ala Phe Arg Gly Asp Ser Phe Thr His Thr
    370                 375                 380

Pro Pro Leu Asp Pro Gln Glu Leu Asp Ile Leu Lys Thr Val Lys Glu
385                 390                 395                 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Glu Asn Arg Thr Asp
                405                 410                 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln
            420                 425                 430

His Gly Gln Phe Ser Leu Ala Val Val Ser Leu Asn Ile Thr Ser Leu
        435                 440                 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser
    450                 455                 460

Gly Asn Lys Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu
465                 470                 475                 480

Phe Gly Thr Ser Gly Gln Lys Thr Lys Ile Ile Ser Asn Arg Gly Glu
                485                 490                 495
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Asn Ser Cys Lys Ala Thr Gly Gln Val Cys His Ala Leu Cys Ser Pro
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Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Arg Asn
        515                 520                 525

Val Ser Arg Gly Arg Glu Cys Val Asp Lys Cys Asn Leu Leu Glu Gly
    530                 535                 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro
545                 550                 555                 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro
                565                 570                 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val
            580                 585                 590

Lys Thr Cys Pro Ala Gly Val Met Gly Glu Asn Asn Thr Leu Val Trp
        595                 600                 605

Lys Tyr Ala Asp Ala Gly His Val Cys His Leu Cys His Pro Asn Cys
    610                 615                 620

Thr Tyr Gly Cys Thr Gly Pro Gly Leu Glu Gly Cys Pro Thr Asn Gly
625                 630                 635                 640

Pro Lys Ile Pro Ser Ile Ala Thr Gly Met Val Gly Ala Leu Leu Leu
                645                 650                 655

Leu Leu Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His
            660                 665                 670

Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu
        675                 680                 685

Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala Leu Leu
    690                 695                 700

Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser
705                 710                 715                 720

Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu
                725                 730                 735
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Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser
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Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser
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Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser
    770                 775                 780

Thr Val Gln Leu Ile Thr Gln Leu Met Pro Phe Gly Cys Leu Leu Asp
785                 790                 795                 800

Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu Leu Asn
                805                 810                 815

Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg
            820                 825                 830

Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro
        835                 840                 845

Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Gly Ala
    850                 855                 860

Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile Lys Trp
865                 870                 875                 880

Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp
                885                 890                 895

Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ser
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Lys Pro Tyr Asp Gly Ile Pro Ala Ser Glu Ile Ser Ser Ile Leu Glu
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Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr
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Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys
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Phe Arg Glu Leu Ile Ile Glu Phe Ser Lys Met Ala Arg Asp Pro Gln
                965                 970                 975
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Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro
            980                 985                 990

Thr Asp Ser Asn Phe Tyr Arg Ala  Leu Met Asp Glu Glu  Asp Met Asp
        995                 1000                1005

Asp Val  Val Asp Ala Asp Glu  Tyr Leu Ile Pro Gln  Gln Gly Phe
    1010                1015                1020

Phe Ser  Ser Pro Ser Thr Ser  Arg Thr Pro Leu Leu  Ser Ser Leu
    1025                1030                1035

Ser Ala  Thr Ser Asn Asn Ser  Thr Val Ala Cys Ile  Asp Arg Asn
    1040                1045                1050

Gly Leu  Gln Ser Cys Pro Ile  Lys Glu Asp Ser Phe  Leu Gln Arg
    1055                1060                1065

Tyr Ser  Ser Asp Pro Thr Gly  Ala Leu Thr Glu Asp  Ser Ile Asp
    1070                1075                1080

Asp Thr  Phe Leu Pro Val Pro  Glu Tyr Ile Asn Gln  Ser Val Pro
    1085                1090                1095

Lys Arg  Pro Ala Gly Ser Val  Gln Asn Pro Val Tyr  His Asn Gln
    1100                1105                1110

Pro Leu  Asn Pro Ala Pro Ser  Arg Asp Pro His Tyr  Gln Asp Pro
    1115                1120                1125

His Ser  Thr Ala Val Gly Asn  Pro Glu Tyr Leu Asn  Thr Val Gln
    1130                1135                1140

Pro Thr  Cys Val Asn Ser Thr  Phe Asp Ser Pro Ala  His Trp Ala
    1145                1150                1155

Gln Lys  Gly Ser His Gln Ile  Ser Leu Asp Asn Pro  Asp Tyr Gln
    1160                1165                1170

Gln Asp  Phe Phe Pro Lys Glu  Ala Lys Pro Asn Gly  Ile Phe Lys
    1175                1180                1185

Gly Ser  Thr Ala Glu Asn Ala  Glu Tyr Leu Arg Val  Ala Pro Gln
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gggtctcgtc gttgccggcg cagtcactgg gcacaaccgt gggactccgt ctgtctcgga    240

ttaatcccgg agagccagag ccaacctctc ccggtcagag atg cga ccc tca ggg      295
                                               Met Arg Pro Ser Gly
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acc gcg aga acc aca ctg ctg gtg ttg ctg acc gcg ctc tgc gcc gca      343
Thr Ala Arg Thr Thr Leu Leu Val Leu Leu Thr Ala Leu Cys Ala Ala
                10                  15                  20

ggt ggg gcg ttg gag gaa aag aaa gtc tgc caa ggc aca agt aac agg      391
Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln Gly Thr Ser Asn Arg
            25                  30                  35

ctc acc caa ctg ggc act ttt gaa gac cac ttt ctg agc ctg cag agg      439
Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe Leu Ser Leu Gln Arg
        40                  45                  50

atg tac aac aac tgt gaa gtg gtc ctt ggg aac ttg gaa att acc tat      487
Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn Leu Glu Ile Thr Tyr
    55                  60                  65

gtg caa agg aat tac gac ctt tcc ttc tta aag acc atc cag gag gtg      535
Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys Thr Ile Gln Glu Val
70                  75                  80                  85

gcc ggc tat gtc ctc att gcc ctc aac acc gtg gag aga atc cct ttg      583
Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val Glu Arg Ile Pro Leu
                90                  95                  100

gag aac ctg cag atc atc agg gga aat gct ctt tat gaa aac acc tat      631
Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu Tyr Glu Asn Thr Tyr
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gcc tta gcc atc ctg tcc aac tat ggg aca aac aga act ggg ctt agg      679
Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn Arg Thr Gly Leu Arg
        120                 125                 130
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gaa ctg ccc atg cgg aac tta cag gaa atc ctg att ggt gct gtg cga      727
Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu Ile Gly Ala Val Arg
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ttc agc aac aac ccc atc ctc tgc aat atg gat act atc cag tgg agg      775
Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp Thr Ile Gln Trp Arg
150                 155                 160                 165

gac atc gtc caa aac gtc ttt atg agc aac atg tca atg gac tta cag      823
Asp Ile Val Gln Asn Val Phe Met Ser Asn Met Ser Met Asp Leu Gln
                170                 175                 180

agc cat ccg agc agt tgc ccc aaa tgt gat cca agc tgt ccc aat gga      871
Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro Ser Cys Pro Asn Gly
            185                 190                 195

agc tgc tgg gga gga gga gag gag aac tgc cag aaa ttg acc aaa atc      919
Ser Cys Trp Gly Gly Gly Glu Glu Asn Cys Gln Lys Leu Thr Lys Ile
        200                 205                 210

atc tgt gcc cag caa tgt tcc cat cgc tgt cgt ggc agg tcc ccc agt      967
Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg Gly Arg Ser Pro Ser
    215                 220                 225

gac tgc tgc cac aac caa tgt gct gcg ggg tgt aca ggg ccc cga gag     1015
Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys Thr Gly Pro Arg Glu
230                 235                 240                 245

agt gac tgt ctg gtc tgc caa aag ttc caa gat gag gcc aca tgc aaa     1063
Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp Glu Ala Thr Cys Lys
                250                 255                 260

gac acc tgc cca cca ctc atg ctg tac aac ccc acc acc tat cag atg     1111
Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro Thr Thr Tyr Gln Met
            265                 270                 275

gat gtc aac cct gaa ggg aag tac agc ttt ggt gcc acc tgt gtg aag     1159
Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly Ala Thr Cys Val Lys
        280                 285                 290

aag tgc ccc cga aac tac gtg gtg aca gat cat ggc tca tgt gtc cga     1207
Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His Gly Ser Cys Val Arg
    295                 300                 305

gcc tgt ggg cct gac tac tac gaa gtg gaa gaa gat ggc atc cgc aag     1255
Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu Asp Gly Ile Arg Lys
310                 315                 320                 325

tgt aaa aaa tgt gat ggg ccc tgt cgc aaa gtt tgt aat ggc ata ggc     1303
Cys Lys Lys Cys Asp Gly Pro Cys Arg Lys Val Cys Asn Gly Ile Gly
                330                 335                 340

att ggt gaa ttt aaa gac aca ctc tcc ata aat gct aca aac atc aaa     1351
Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn Ala Thr Asn Ile Lys
            345                 350                 355

cac ttc aaa tac tgc act gcc atc agc ggg gac ctt cac atc ctg cca     1399
His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp Leu His Ile Leu Pro
        360                 365                 370
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gtg gcc ttt aag ggg gat tct ttc acg cgc act cct cct cta gac cca     1447
Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr Pro Pro Leu Asp Pro
    375                 380                 385

cga gaa cta gaa att cta aaa acc gta aag gaa ata aca ggc ttt ttg     1495
Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu Ile Thr Gly Phe Leu
390                 395                 400                 405

ctg att cag gct tgg cct gat aac tgg act gac ctc cat gct ttc gag     1543
Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp Leu His Ala Phe Glu
                410                 415                 420

aac cta gaa ata ata cgt ggc aga aca aag caa cat ggt cag ttt tct     1591
Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln His Gly Gln Phe Ser
            425                 430                 435

ttg gcg gtc gtt ggc ctg aac atc aca tca ctg ggg ctg cgt tcc ctc     1639
Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu Gly Leu Arg Ser Leu
        440                 445                 450

aag gag atc agt gat ggg gat gtg atc att tct gga aac cga aat ttg     1687
Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser Gly Asn Arg Asn Leu
    455                 460                 465

tgc tac gca aac aca ata aac tgg aaa aaa ctc ttc ggg aca ccc aat     1735
Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu Phe Gly Thr Pro Asn
470                 475                 480                 485

cag aaa acc aaa atc atg aac aac aga gct gag aaa gac tgc aag gcc     1783
Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu Lys Asp Cys Lys Ala
                490                 495                 500

gtg aac cac gtc tgc aat cct tta tgc tcc tcg gaa ggc tgc tgg ggc     1831
Val Asn His Val Cys Asn Pro Leu Cys Ser Ser Glu Gly Cys Trp Gly
            505                 510                 515

cct gag ccc agg gac tgt gtc tcc tgc cag aat gtg agc aga ggc agg     1879
Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn Val Ser Arg Gly Arg
        520                 525                 530

gag tgc gtg gag aaa tgc aac atc ctg gag ggg gaa cca agg gag ttt     1927
Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly Glu Pro Arg Glu Phe
    535                 540                 545

gtg gaa aat tct gaa tgc atc cag tgc cat cca gaa tgt ctg ccc cag     1975
Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro Glu Cys Leu Pro Gln
550                 555                 560                 565

gcc atg aac atc acc tgt aca ggc agg gga cca gac aac tgc atc cag     2023
Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro Asp Asn Cys Ile Gln
                570                 575                 580

tgt gcc cac tac att gat ggc cca cac tgt gtc aag acc tgc cca gct     2071
Cys Ala His Tyr Ile Asp Gly Pro His Cys Val Lys Thr Cys Pro Ala
            585                 590                 595

ggc atc atg gga gag aac aac act ctg gtc tgg aag tat gca gat gcc     2119
Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp Lys Tyr Ala Asp Ala
        600                 605                 610
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aat aat gtc tgc cac cta tgc cac gcc aac tgt acc tat gga tgt gct     2167
Asn Asn Val Cys His Leu Cys His Ala Asn Cys Thr Tyr Gly Cys Ala
    615                 620                 625

ggg cca ggt ctt caa gga tgt gaa gtg tgg cca tct ggg cca aag ata     2215
Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro Ser Gly Pro Lys Ile
630                 635                 640                 645

cca tct att gcc act ggg att gtg ggt ggc ctc ctc ttc ata gtg gtg     2263
Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu Leu Phe Ile Val Val
                650                 655                 660

gtg gcc ctt ggg att ggc cta ttc atg cga aga cgt cac att gtt cga     2311
Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His Ile Val Arg
            665                 670                 675

aag cgt aca cta cgc cgc ctg ctt caa gag aga gag ctc gtg gaa cct     2359
Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu Val Glu Pro
        680                 685                 690

ctc aca ccc agc gga gaa gct cca aac caa gcc cac ttg agg ata tta     2407
Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala His Leu Arg Ile Leu
    695                 700                 705

aag gaa aca gaa ttc aaa aag atc aaa gtt ctg ggt tcg gga gca ttt     2455
Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser Gly Ala Phe
710                 715                 720                 725

ggc aca gtg tat aag ggt ctc tgg atc cca gaa ggt gag aaa gta aaa     2503
Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu Lys Val Lys
                730                 735                 740

atc ccg gtg gcc atc aag gag tta aga gaa gcc aca tct cca aaa gcc     2551
Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser Pro Lys Ala
            745                 750                 755

aac aaa gaa atc ctt gac gaa gcc tat gtg atg gct agt gtg gac aac     2599
Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser Val Asp Asn
        760                 765                 770

cct cat gta tgc cgc ctc ctg ggc atc tgt ctg acc tcc act gtc cag     2647
Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln
    775                 780                 785

ctc att aca cag ctc atg ccc tac ggt tgc ctc ctg gac tac gtc cga     2695
Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu Leu Asp Tyr Val Arg
790                 795                 800                 805

gaa cac aag gac aac att ggc tcc cag tac ctc ctc aac tgg tgt gtg     2743
Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu Leu Asn Trp Cys Val
                810                 815                 820

cag att gca aag ggc atg aac tac ctg gaa gat cgg cgt ttg gtg cac     2791
Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg Leu Val His
            825                 830                 835

cgt gac ttg gca gcc agg aat gta ctg gtg aag aca cca cag cat gtc     2839
Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro Gln His Val
        840                 845                 850
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aag atc aca gat ttt ggg ctg gcc aaa ctg ctt ggt gct gaa gag aaa     2887
Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu Gly Ala Glu Glu Lys
    855                 860                 865

gaa tat cat gcc gag ggg ggc aaa gtg cct atc aag tgg atg gct ttg     2935
Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu
870                 875                 880                 885

gaa tca att tta cac cga att tat aca cac caa agt gat gtc tgg agc     2983
Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp Val Trp Ser
                890                 895                 900

tat ggt gtc act gtg tgg gaa ctg atg acc ttt ggg tcc aag cct tat     3031
Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ser Lys Pro Tyr
            905                 910                 915

gat gga atc cca gca agt gac atc tca tcc atc cta gag aaa gga gag     3079
Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile Leu Glu Lys Gly Glu
        920                 925                 930

cgc ctt cca cag cca cct atc tgc acc atc gat gtc tac atg atc atg     3127
Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met
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gtc aag tgc tgg atg ata gat gct gat agc cgc cca aag ttc cga gag     3175
Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Arg Glu
950                 955                 960                 965

ttg att ctt gaa ttc tcc aaa atg gcc cga gac cca cag cgc tac ctt     3223
Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp Pro Gln Arg Tyr Leu
                970                 975                 980

gtt atc cag ggg gat gaa aga atg cat ttg cca agc cct aca gac tcc     3271
Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp Ser
            985                 990                 995

aac ttt tac  cga gcc ctg atg gat  gaa gag gac atg gag  gat gta     3316
Asn Phe Tyr  Arg Ala Leu Met Asp  Glu Glu Asp Met Glu  Asp Val
        1000                1005                1010

gtt gat gct  gat gag tat ctt atc  cca cag caa ggc ttc  ttc aac     3361
Val Asp Ala  Asp Glu Tyr Leu Ile  Pro Gln Gln Gly Phe  Phe Asn
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agc ccg tcc  acg tcg agg act ccc  ctc ttg agt tct ctg  agt gca     3406
Ser Pro Ser  Thr Ser Arg Thr Pro  Leu Leu Ser Ser Leu  Ser Ala
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act agc aac  aat tcc act gtg gct  tgc att aat aga aat  ggg agc     3451
Thr Ser Asn  Asn Ser Thr Val Ala  Cys Ile Asn Arg Asn  Gly Ser
        1045                1050                1055

tgc cgt gtc  aaa gaa gac gcc ttc  ttg cag cgg tac agc  tcc gac     3496
Cys Arg Val  Lys Glu Asp Ala Phe  Leu Gln Arg Tyr Ser  Ser Asp
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ccc aca ggt  gct gta aca gag gac  aac ata gat gac gca  ttc ctc     3541
Pro Thr Gly  Ala Val Thr Glu Asp  Asn Ile Asp Asp Ala  Phe Leu
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Pro Val Pro  Glu Tyr Val Asn Gln  Ser Val Pro Lys Arg  Pro Ala
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ggc tct gtg  cag aac cct gtc tat  cac aat cag ccc ctg  cat cca      3631
Gly Ser Val  Gln Asn Pro Val Tyr  His Asn Gln Pro Leu  His Pro
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gct cct gga  aga gac ctg cat tat  caa aat ccc cac agc  aat gca      3676
Ala Pro Gly  Arg Asp Leu His Tyr  Gln Asn Pro His Ser  Asn Ala
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gtg ggc aac  cct gag tat ctc aac  act gcc cag cct acc  tgt ctc      3721
Val Gly Asn  Pro Glu Tyr Leu Asn  Thr Ala Gln Pro Thr  Cys Leu
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agt agt ggg  ttt aac agc cct gca  ctc tgg atc cag aaa  ggc agt      3766
Ser Ser Gly  Phe Asn Ser Pro Ala  Leu Trp Ile Gln Lys  Gly Ser
        1150                 1155                 1160

cac caa atg  agc cta gac aac cct  gac tac cag cag gac  ttc ttc      3811
His Gln Met  Ser Leu Asp Asn Pro  Asp Tyr Gln Gln Asp  Phe Phe
        1165                 1170                 1175

ccc aag gaa  acc aag cca aat ggc  ata ttt aag ggc ccc  aca gct      3856
Pro Lys Glu  Thr Lys Pro Asn Gly  Ile Phe Lys Gly Pro  Thr Ala
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gaa aat gca  gag tac cta cgg gtg  gca cct cca agc agt  gag ttt      3901
Glu Asn Ala  Glu Tyr Leu Arg Val  Ala Pro Pro Ser Ser  Glu Phe
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att gga gca  tga caagaagggg catcatacca gctataaaat gtctggactt      3953
Ile Gly Ala
        1210

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Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe
        35                  40                  45

Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn
    50                  55                  60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys
65                  70                  75                  80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
                85                  90                  95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu
            100                 105                 110

Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn
        115                 120                 125

Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
    130                 135                 140

Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp
145                 150                 155                 160

Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met
                165                 170                 175

Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro
            180                 185                 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Gly Glu Glu Asn Cys Gln
        195                 200                 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg
    210                 215                 220

Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys
225                 230                 235                 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp
                245                 250                 255
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Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro
            260                 265                 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly
        275                 280                 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His
    290                 295                 300

Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu
305                 310                 315                 320

Asp Gly Ile Arg Lys Cys Lys Lys Cys Asp Gly Pro Cys Arg Lys Val
                325                 330                 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn
            340                 345                 350

Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp
        355                 360                 365

Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr
    370                 375                 380

Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu
385                 390                 395                 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp
                405                 410                 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln
            420                 425                 430

His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu
        435                 440                 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser
    450                 455                 460

Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu
465                 470                 475                 480

Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu
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Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser
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Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn
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Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly
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Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro
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Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro
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Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val
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Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp
595 600 605

Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys
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Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro
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Ser Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu
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Leu Phe Ile Val Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg
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Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg
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Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala
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His Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu
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Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu

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Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala
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Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met
755 760 765

Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu
770 775 780

Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu
785 790 795 800

Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu
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Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp
820 825 830

Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys
835 840 845

Thr Pro Gln His Val Lys Ile Thr Asp Phe Gly Leu Ala Lys Leu Leu
850 855 860

Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile
865 870 875 880

Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln
885 890 895

Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe
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Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile
915 920 925

Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp
930 935 940

Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg
945 950 955 960

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Pro Lys Phe Arg Glu Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp
               965                 970                 975

Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro
           980                 985                 990

Ser Pro Thr Asp Ser Asn Phe Tyr  Arg Ala Leu Met Asp  Glu Glu Asp
        995                 1000                1005

Met Glu  Asp Val Val Asp Ala  Asp Glu Tyr Leu Ile  Pro Gln Gln
    1010                1015                1020

Gly Phe  Phe Asn Ser Pro Ser  Thr Ser Arg Thr Pro  Leu Leu Ser
    1025                1030                1035

Ser Leu  Ser Ala Thr Ser Asn  Asn Ser Thr Val Ala  Cys Ile Asn
    1040                1045                1050

Arg Asn  Gly Ser Cys Arg Val  Lys Glu Asp Ala Phe  Leu Gln Arg
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Tyr Ser  Ser Asp Pro Thr Gly  Ala Val Thr Glu Asp  Asn Ile Asp
    1070                1075                1080

Asp Ala  Phe Leu Pro Val Pro  Glu Tyr Val Asn Gln  Ser Val Pro
    1085                1090                1095

Lys Arg  Pro Ala Gly Ser Val  Gln Asn Pro Val Tyr  His Asn Gln
    1100                1105                1110

Pro Leu  His Pro Ala Pro Gly  Arg Asp Leu His Tyr  Gln Asn Pro
    1115                1120                1125

His Ser  Asn Ala Val Gly Asn  Pro Glu Tyr Leu Asn  Thr Ala Gln
    1130                1135                1140

Pro Thr  Cys Leu Ser Ser Gly  Phe Asn Ser Pro Ala  Leu Trp Ile
    1145                1150                1155

Gln Lys  Gly Ser His Gln Met  Ser Leu Asp Asn Pro  Asp Tyr Gln
    1160                1165                1170

Gln Asp  Phe Phe Pro Lys Glu  Thr Lys Pro Asn Gly  Ile Phe Lys
    1175                1180                1185
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Ser Ser  Glu Phe Ile Gly Ala
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gggtctcgtc gttgccggcg cagtcactgg gcacaaccgt gggactccgt ctgtctcgga    240

ttaatcccgg agagccagag ccaacctctc ccggtcagag atg cga ccc tca ggg      295
                                               Met Arg Pro Ser Gly
                                               1               5

acc gcg aga acc aca ctg ctg gtg ttg ctg acc gcg ctc tgc gcc gca      343
Thr Ala Arg Thr Thr Leu Leu Val Leu Leu Thr Ala Leu Cys Ala Ala
                10                  15                  20

ggt ggg gcg ttg gag gaa aag aaa gtc tgc caa ggc aca agt aac agg      391
Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln Gly Thr Ser Asn Arg
            25                  30                  35

ctc acc caa ctg ggc act ttt gaa gac cac ttt ctg agc ctg cag agg      439
Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe Leu Ser Leu Gln Arg
        40                  45                  50

atg tac aac aac tgt gaa gtg gtc ctt ggg aac ttg gaa att acc tat      487
Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn Leu Glu Ile Thr Tyr
    55                  60                  65

gtg caa agg aat tac gac ctt tcc ttc tta aag acc atc cag gag gtg      535
Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys Thr Ile Gln Glu Val
70                  75                  80                  85

gcc ggc tat gtc ctc att gcc ctc aac acc gtg gag aga atc cct ttg      583
Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val Glu Arg Ile Pro Leu
                90                  95                  100

gag aac ctg cag atc atc agg gga aat gct ctt tat gaa aac acc tat      631
Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu Tyr Glu Asn Thr Tyr
            105                 110                 115
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gcc tta gcc atc ctg tcc aac tat ggg aca aac aga act ggg ctt agg      679
Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn Arg Thr Gly Leu Arg
        120                 125                 130

gaa ctg ccc atg cgg aac tta cag gaa atc ctg att ggt gct gtg cga      727
Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu Ile Gly Ala Val Arg
    135                 140                 145

ttc agc aac aac ccc atc ctc tgc aat atg gat act atc cag tgg agg      775
Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp Thr Ile Gln Trp Arg
150                 155                 160                 165

gac atc gtc caa aac gtc ttt atg agc aac atg tca atg gac tta cag      823
Asp Ile Val Gln Asn Val Phe Met Ser Asn Met Ser Met Asp Leu Gln
                170                 175                 180

agc cat ccg agc agt tgc ccc aaa tgt gat cca agc tgt ccc aat gga      871
Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro Ser Cys Pro Asn Gly
            185                 190                 195

agc tgc tgg gga gga gga gag gag aac tgc cag aaa ttg acc aaa atc      919
Ser Cys Trp Gly Gly Gly Glu Glu Asn Cys Gln Lys Leu Thr Lys Ile
        200                 205                 210

atc tgt gcc cag caa tgt tcc cat cgc tgt cgt ggc agg tcc ccc agt      967
Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg Gly Arg Ser Pro Ser
    215                 220                 225

gac tgc tgc cac aac caa tgt gct gcg ggg tgt aca ggg ccc cga gag     1015
Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys Thr Gly Pro Arg Glu
230                 235                 240                 245

agt gac tgt ctg gtc tgc caa aag ttc caa gat gag gcc aca tgc aaa     1063
Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp Glu Ala Thr Cys Lys
                250                 255                 260

gac acc tgc cca cca ctc atg ctg tac aac ccc acc acc tat cag atg     1111
Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro Thr Thr Tyr Gln Met
            265                 270                 275

gat gtc aac cct gaa ggg aag tac agc ttt ggt gcc acc tgt gtg aag     1159
Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly Ala Thr Cys Val Lys
        280                 285                 290

aag tgc ccc cga aac tac gtg gtg aca gat cat ggc tca tgt gtc cga     1207
Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His Gly Ser Cys Val Arg
    295                 300                 305

gcc tgt ggg cct gac tac tac gaa gtg gaa gaa gat ggc atc cgc aag     1255
Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu Asp Gly Ile Arg Lys
310                 315                 320                 325

tgt aaa aaa tgt gat ggg ccc tgt cgc aaa gtt tgt aat ggc ata ggc     1303
Cys Lys Lys Cys Asp Gly Pro Cys Arg Lys Val Cys Asn Gly Ile Gly
                330                 335                 340

att ggt gaa ttt aaa gac aca ctc tcc ata aat gct aca aac atc aaa     1351
Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn Ala Thr Asn Ile Lys
            345                 350                 355
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cac ttc aaa tac tgc act gcc atc agc ggg gac ctt cac atc ctg cca      1399
His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp Leu His Ile Leu Pro
        360                 365                 370

gtg gcc ttt aag ggg gat tct ttc acg cgc act cct cct cta gac cca      1447
Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr Pro Pro Leu Asp Pro
    375                 380                 385

cga gaa cta gaa att cta aaa acc gta aag gaa ata aca ggc ttt ttg      1495
Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu Ile Thr Gly Phe Leu
390                 395                 400                 405

ctg att cag gct tgg cct gat aac tgg act gac ctc cat gct ttc gag      1543
Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp Leu His Ala Phe Glu
                410                 415                 420

aac cta gaa ata ata cgt ggc aga aca aag caa cat ggt cag ttt tct      1591
Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln His Gly Gln Phe Ser
            425                 430                 435

ttg gcg gtc gtt ggc ctg aac atc aca tca ctg ggg ctg cgt tcc ctc      1639
Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu Gly Leu Arg Ser Leu
        440                 445                 450

aag gag atc agt gat ggg gat gtg atc att tct gga aac cga aat ttg      1687
Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser Gly Asn Arg Asn Leu
    455                 460                 465

tgc tac gca aac aca ata aac tgg aaa aaa ctc ttc ggg aca ccc aat      1735
Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu Phe Gly Thr Pro Asn
470                 475                 480                 485

cag aaa acc aaa atc atg aac aac aga gct gag aaa gac tgc aag gcc      1783
Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu Lys Asp Cys Lys Ala
                490                 495                 500

gtg aac cac gtc tgc aat cct tta tgc tcc tcg gaa ggc tgc tgg ggc      1831
Val Asn His Val Cys Asn Pro Leu Cys Ser Ser Glu Gly Cys Trp Gly
            505                 510                 515

cct gag ccc agg gac tgt gtc tcc tgc cag aat gtg agc aga ggc agg      1879
Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn Val Ser Arg Gly Arg
        520                 525                 530

gag tgc gtg gag aaa tgc aac atc ctg gag ggg gaa cca agg gag ttt      1927
Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly Glu Pro Arg Glu Phe
    535                 540                 545

gtg gaa aat tct gaa tgc atc cag tgc cat cca gaa tgt ctg ccc cag      1975
Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro Glu Cys Leu Pro Gln
550                 555                 560                 565

gcc atg aac atc acc tgt aca ggc agg gga cca gac aac tgc atc cag      2023
Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro Asp Asn Cys Ile Gln
                570                 575                 580

tgt gcc cac tac att gat ggc cca cac tgt gtc aag acc tgc cca gct      2071
Cys Ala His Tyr Ile Asp Gly Pro His Cys Val Lys Thr Cys Pro Ala
            585                 590                 595
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ggc atc atg gga gag aac aac act ctg gtc tgg aag tat gca gat gcc     2119
Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp Lys Tyr Ala Asp Ala
        600                 605                 610

aat aat gtc tgc cac cta tgc cac gcc aac tgt acc tat gga tgt gct     2167
Asn Asn Val Cys His Leu Cys His Ala Asn Cys Thr Tyr Gly Cys Ala
    615                 620                 625

ggg cca ggt ctt caa gga tgt gaa gtg tgg cca tct ggg cca aag ata     2215
Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro Ser Gly Pro Lys Ile
630                 635                 640                 645

cca tct att gcc act ggg att gtg ggt ggc ctc ctc ttc ata gtg gtg     2263
Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu Leu Phe Ile Val Val
                650                 655                 660

gtg gcc ctt ggg att ggc cta ttc atg cga aga cgt cac att gtt cga     2311
Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg Arg His Ile Val Arg
            665                 670                 675

aag cgt aca cta cgc cgc ctg ctt caa gag aga gag ctc gtg gaa cct     2359
Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg Glu Leu Val Glu Pro
        680                 685                 690

ctc aca ccc agc gga gaa gct cca aac caa gcc cac ttg agg ata tta     2407
Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala His Leu Arg Ile Leu
    695                 700                 705

aag gaa aca gaa ttc aaa aag atc aaa gtt ctg ggt tcg gga gca ttt     2455
Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu Gly Ser Gly Ala Phe
710                 715                 720                 725

ggc aca gtg tat aag ggt ctc tgg atc cca gaa ggt gag aaa gta aaa     2503
Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu Gly Glu Lys Val Lys
                730                 735                 740

atc ccg gtg gcc atc aag gag tta aga gaa gcc aca tct cca aaa gcc     2551
Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala Thr Ser Pro Lys Ala
            745                 750                 755

aac aaa gaa atc ctt gac gaa gcc tat gtg atg gct agt gtg gac aac     2599
Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met Ala Ser Val Asp Asn
        760                 765                 770

cct cat gta tgc cgc ctc ctg ggc atc tgt ctg acc tcc act gtc cag     2647
Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln
    775                 780                 785

ctc att aca cag ctc atg ccc tac ggt tgc ctc ctg gac tac gtc cga     2695
Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu Leu Asp Tyr Val Arg
790                 795                 800                 805

gaa cac aag gac aac att ggc tcc cag tac ctc ctc aac tgg tgt gtg     2743
Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu Leu Asn Trp Cys Val
                810                 815                 820

cag att gca aag ggc atg aac tac ctg gaa gat cgg cgt ttg gtg cac     2791
Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp Arg Arg Leu Val His
            825                 830                 835
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cgt gac ttg gca gcc agg aat gta ctg gtg aag aca cca cag cat gtc     2839
Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Thr Pro Gln His Val
        840                 845                 850

aag atc aca ggt ttt ggg ctg gcc aaa ctg ctt ggt gct gaa gag aaa     2887
Lys Ile Thr Gly Phe Gly Leu Ala Lys Leu Leu Gly Ala Glu Glu Lys
    855                 860                 865

gaa tat cat gcc gag ggg ggc aaa gtg cct atc aag tgg atg gct ttg     2935
Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu
870                 875                 880                 885

gaa tca att tta cac cga att tat aca cac caa agt gat gtc tgg agc     2983
Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln Ser Asp Val Trp Ser
                890                 895                 900

tat ggt gtc act gtg tgg gaa ctg atg acc ttt ggg tcc aag cct tat     3031
Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ser Lys Pro Tyr
            905                 910                 915

gat gga atc cca gca agt gac atc tca tcc atc cta gag aaa gga gag     3079
Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile Leu Glu Lys Gly Glu
        920                 925                 930

cgc ctt cca cag cca cct atc tgc acc atc gat gtc tac atg atc atg     3127
Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met
    935                 940                 945

gtc aag tgc tgg atg ata gat gct gat agc cgc cca aag ttc cga gag     3175
Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Arg Glu
950                 955                 960                 965

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Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp Pro Gln Arg Tyr Leu
                970                 975                 980

gtt atc cag ggg gat gaa aga atg cat ttg cca agc cct aca gac tcc     3271
Val Ile Gln Gly Asp Glu Arg Met His Leu Pro Ser Pro Thr Asp Ser
            985                 990                 995

aac ttt tac  cga gcc ctg atg gat  gaa gag gac atg gag  gat gta     3316
Asn Phe Tyr  Arg Ala Leu Met Asp  Glu Glu Asp Met Glu  Asp Val
        1000                1005                1010

gtt gat gct  gat gag tat ctt atc  cca cag caa ggc ttc  ttc aac     3361
Val Asp Ala  Asp Glu Tyr Leu Ile  Pro Gln Gln Gly Phe  Phe Asn
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agc ccg tcc  acg tcg agg act ccc  ctc ttg agt tct ctg  agt gca     3406
Ser Pro Ser  Thr Ser Arg Thr Pro  Leu Leu Ser Ser Leu  Ser Ala
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act agc aac  aat tcc act gtg gct  tgc att aat aga aat  ggg agc     3451
Thr Ser Asn  Asn Ser Thr Val Ala  Cys Ile Asn Arg Asn  Gly Ser
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tgc cgt gtc  aaa gaa gac gcc ttc  ttg cag cgg tac agc  tcc gac     3496
Cys Arg Val  Lys Glu Asp Ala Phe  Leu Gln Arg Tyr Ser  Ser Asp
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ccc aca ggt  gct gta aca gag gac  aac ata gat gac gca  ttc ctc      3541
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cct gta cct  gaa tat gta aac caa  tct gtt ccc aag agg  cca gca      3586
Pro Val Pro  Glu Tyr Val Asn Gln  Ser Val Pro Lys Arg  Pro Ala
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ggc tct gtg  cag aac cct gtc tat  cac aat cag ccc ctg  cat cca      3631
Gly Ser Val  Gln Asn Pro Val Tyr  His Asn Gln Pro Leu  His Pro
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gct cct gga  aga gac ctg cat tat  caa aat ccc cac agc  aat gca      3676
Ala Pro Gly  Arg Asp Leu His Tyr  Gln Asn Pro His Ser  Asn Ala
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gtg ggc aac  cct gag tat ctc aac  act gcc cag cct acc  tgt ctc      3721
Val Gly Asn  Pro Glu Tyr Leu Asn  Thr Ala Gln Pro Thr  Cys Leu
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agt agt ggg  ttt aac agc cct gca  ctc tgg atc cag aaa  ggc agt      3766
Ser Ser Gly  Phe Asn Ser Pro Ala  Leu Trp Ile Gln Lys  Gly Ser
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cac caa atg  agc cta gac aac cct  gac tac cag cag gac  ttc ttc      3811
His Gln Met  Ser Leu Asp Asn Pro  Asp Tyr Gln Gln Asp  Phe Phe
        1165                 1170                 1175

ccc aag gaa  acc aag cca aat ggc  ata ttt aag ggc ccc  aca gct      3856
Pro Lys Glu  Thr Lys Pro Asn Gly  Ile Phe Lys Gly Pro  Thr Ala
        1180                 1185                 1190

gaa aat gca  gag tac cta cgg gtg  gca cct cca agc agt  gag ttt      3901
Glu Asn Ala  Glu Tyr Leu Arg Val  Ala Pro Pro Ser Ser  Glu Phe
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Ile Gly Ala
        1210

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gagtgagaat attaagcagc atttatagag ctcaaaattc catgtcatca ccaggaagtg 5753

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caagccactc taactgtagc aatgaaaccc tagtattttt gtactttgaa atactttctt 5933

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Ala Leu Cys Ala Ala Gly Gly Ala Leu Glu Glu Lys Lys Val Cys Gln
            20                  25                  30

Gly Thr Ser Asn Arg Leu Thr Gln Leu Gly Thr Phe Glu Asp His Phe
        35                  40                  45

Leu Ser Leu Gln Arg Met Tyr Asn Asn Cys Glu Val Val Leu Gly Asn
    50                  55                  60

Leu Glu Ile Thr Tyr Val Gln Arg Asn Tyr Asp Leu Ser Phe Leu Lys
65                  70                  75                  80

Thr Ile Gln Glu Val Ala Gly Tyr Val Leu Ile Ala Leu Asn Thr Val
                85                  90                  95

Glu Arg Ile Pro Leu Glu Asn Leu Gln Ile Ile Arg Gly Asn Ala Leu
            100                 105                 110

Tyr Glu Asn Thr Tyr Ala Leu Ala Ile Leu Ser Asn Tyr Gly Thr Asn
        115                 120                 125

Arg Thr Gly Leu Arg Glu Leu Pro Met Arg Asn Leu Gln Glu Ile Leu
    130                 135                 140

Ile Gly Ala Val Arg Phe Ser Asn Asn Pro Ile Leu Cys Asn Met Asp
145                 150                 155                 160

Thr Ile Gln Trp Arg Asp Ile Val Gln Asn Val Phe Met Ser Asn Met
                165                 170                 175

Ser Met Asp Leu Gln Ser His Pro Ser Ser Cys Pro Lys Cys Asp Pro
            180                 185                 190

Ser Cys Pro Asn Gly Ser Cys Trp Gly Gly Gly Glu Glu Asn Cys Gln
        195                 200                 205

Lys Leu Thr Lys Ile Ile Cys Ala Gln Gln Cys Ser His Arg Cys Arg
    210                 215                 220

Gly Arg Ser Pro Ser Asp Cys Cys His Asn Gln Cys Ala Ala Gly Cys
225                 230                 235                 240

Thr Gly Pro Arg Glu Ser Asp Cys Leu Val Cys Gln Lys Phe Gln Asp
                245                 250                 255
```

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Glu Ala Thr Cys Lys Asp Thr Cys Pro Pro Leu Met Leu Tyr Asn Pro
            260                 265                 270

Thr Thr Tyr Gln Met Asp Val Asn Pro Glu Gly Lys Tyr Ser Phe Gly
        275                 280                 285

Ala Thr Cys Val Lys Lys Cys Pro Arg Asn Tyr Val Val Thr Asp His
    290                 295                 300

Gly Ser Cys Val Arg Ala Cys Gly Pro Asp Tyr Tyr Glu Val Glu Glu
305                 310                 315                 320

Asp Gly Ile Arg Lys Cys Lys Lys Cys Asp Gly Pro Cys Arg Lys Val
                325                 330                 335

Cys Asn Gly Ile Gly Ile Gly Glu Phe Lys Asp Thr Leu Ser Ile Asn
            340                 345                 350

Ala Thr Asn Ile Lys His Phe Lys Tyr Cys Thr Ala Ile Ser Gly Asp
        355                 360                 365

Leu His Ile Leu Pro Val Ala Phe Lys Gly Asp Ser Phe Thr Arg Thr
    370                 375                 380

Pro Pro Leu Asp Pro Arg Glu Leu Glu Ile Leu Lys Thr Val Lys Glu
385                 390                 395                 400

Ile Thr Gly Phe Leu Leu Ile Gln Ala Trp Pro Asp Asn Trp Thr Asp
                405                 410                 415

Leu His Ala Phe Glu Asn Leu Glu Ile Ile Arg Gly Arg Thr Lys Gln
            420                 425                 430

His Gly Gln Phe Ser Leu Ala Val Val Gly Leu Asn Ile Thr Ser Leu
        435                 440                 445

Gly Leu Arg Ser Leu Lys Glu Ile Ser Asp Gly Asp Val Ile Ile Ser
    450                 455                 460

Gly Asn Arg Asn Leu Cys Tyr Ala Asn Thr Ile Asn Trp Lys Lys Leu
465                 470                 475                 480

Phe Gly Thr Pro Asn Gln Lys Thr Lys Ile Met Asn Asn Arg Ala Glu
                485                 490                 495
```

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Lys Asp Cys Lys Ala Val Asn His Val Cys Asn Pro Leu Cys Ser Ser
            500                 505                 510

Glu Gly Cys Trp Gly Pro Glu Pro Arg Asp Cys Val Ser Cys Gln Asn
        515                 520                 525

Val Ser Arg Gly Arg Glu Cys Val Glu Lys Cys Asn Ile Leu Glu Gly
    530                 535                 540

Glu Pro Arg Glu Phe Val Glu Asn Ser Glu Cys Ile Gln Cys His Pro
545                 550                 555                 560

Glu Cys Leu Pro Gln Ala Met Asn Ile Thr Cys Thr Gly Arg Gly Pro
                565                 570                 575

Asp Asn Cys Ile Gln Cys Ala His Tyr Ile Asp Gly Pro His Cys Val
            580                 585                 590

Lys Thr Cys Pro Ala Gly Ile Met Gly Glu Asn Asn Thr Leu Val Trp
        595                 600                 605

Lys Tyr Ala Asp Ala Asn Asn Val Cys His Leu Cys His Ala Asn Cys
    610                 615                 620

Thr Tyr Gly Cys Ala Gly Pro Gly Leu Gln Gly Cys Glu Val Trp Pro
625                 630                 635                 640

Ser Gly Pro Lys Ile Pro Ser Ile Ala Thr Gly Ile Val Gly Gly Leu
                645                 650                 655

Leu Phe Ile Val Val Val Ala Leu Gly Ile Gly Leu Phe Met Arg Arg
            660                 665                 670

Arg His Ile Val Arg Lys Arg Thr Leu Arg Arg Leu Leu Gln Glu Arg
        675                 680                 685

Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Glu Ala Pro Asn Gln Ala
    690                 695                 700

His Leu Arg Ile Leu Lys Glu Thr Glu Phe Lys Lys Ile Lys Val Leu
705                 710                 715                 720

Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Leu Trp Ile Pro Glu
                725                 730                 735
```

Gly Glu Lys Val Lys Ile Pro Val Ala Ile Lys Glu Leu Arg Glu Ala
740 745 750

Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu Asp Glu Ala Tyr Val Met
755 760 765

Ala Ser Val Asp Asn Pro His Val Cys Arg Leu Leu Gly Ile Cys Leu
770 775 780

Thr Ser Thr Val Gln Leu Ile Thr Gln Leu Met Pro Tyr Gly Cys Leu
785 790 795 800

Leu Asp Tyr Val Arg Glu His Lys Asp Asn Ile Gly Ser Gln Tyr Leu
805 810 815

Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Asn Tyr Leu Glu Asp
820 825 830

Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys
835 840 845

Thr Pro Gln His Val Lys Ile Thr Gly Phe Gly Leu Ala Lys Leu Leu
850 855 860

Gly Ala Glu Glu Lys Glu Tyr His Ala Glu Gly Gly Lys Val Pro Ile
865 870 875 880

Lys Trp Met Ala Leu Glu Ser Ile Leu His Arg Ile Tyr Thr His Gln
885 890 895

Ser Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe
900 905 910

Gly Ser Lys Pro Tyr Asp Gly Ile Pro Ala Ser Asp Ile Ser Ser Ile
915 920 925

Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp
930 935 940

Val Tyr Met Ile Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg
945 950 955 960

Pro Lys Phe Arg Glu Leu Ile Leu Glu Phe Ser Lys Met Ala Arg Asp
965 970 975

```
Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Glu Arg Met His Leu Pro
            980                 985                 990

Ser Pro Thr Asp Ser Asn Phe Tyr  Arg Ala Leu Met Asp  Glu Glu Asp
        995                 1000                1005

Met Glu  Asp Val Val Asp Ala  Asp Glu Tyr Leu Ile  Pro Gln Gln
    1010                1015                1020

Gly Phe  Phe Asn Ser Pro Ser  Thr Ser Arg Thr Pro  Leu Leu Ser
    1025                1030                1035

Ser Leu  Ser Ala Thr Ser Asn  Asn Ser Thr Val Ala  Cys Ile Asn
    1040                1045                1050

Arg Asn  Gly Ser Cys Arg Val  Lys Glu Asp Ala Phe  Leu Gln Arg
    1055                1060                1065

Tyr Ser  Ser Asp Pro Thr Gly  Ala Val Thr Glu Asp  Asn Ile Asp
    1070                1075                1080

Asp Ala  Phe Leu Pro Val Pro  Glu Tyr Val Asn Gln  Ser Val Pro
    1085                1090                1095

Lys Arg  Pro Ala Gly Ser Val  Gln Asn Pro Val Tyr  His Asn Gln
    1100                1105                1110

Pro Leu  His Pro Ala Pro Gly  Arg Asp Leu His Tyr  Gln Asn Pro
    1115                1120                1125

His Ser  Asn Ala Val Gly Asn  Pro Glu Tyr Leu Asn  Thr Ala Gln
    1130                1135                1140

Pro Thr  Cys Leu Ser Ser Gly  Phe Asn Ser Pro Ala  Leu Trp Ile
    1145                1150                1155

Gln Lys  Gly Ser His Gln Met  Ser Leu Asp Asn Pro  Asp Tyr Gln
    1160                1165                1170

Gln Asp  Phe Phe Pro Lys Glu  Thr Lys Pro Asn Gly  Ile Phe Lys
    1175                1180                1185

Gly Pro  Thr Ala Glu Asn Ala  Glu Tyr Leu Arg Val  Ala Pro Pro
    1190                1195                1200
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Ser Ser Glu Phe Ile Gly Ala
1205 1210

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cccacggggc cctttactgc gccgcgcgcc cggcccccac ccctcgcagc accccgcgcc 180

ccgcgccctc ccagccgggt ccagccggag ccatggggcc ggagccgcag tgagcacc 238

atg gag ctg gcg gcc ttg tgc cgc tgg ggg ctc ctc ctc gcc ctc ttg 286
Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
1 5 10 15

ccc ccc gga gcc gcg agc acc caa gtg tgc acc ggc aca gac atg aag 334
Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
20 25 30

```
ctg cgg ctc cct gcc agt ccc gag acc cac ctg gac atg ctc cgc cac      382
Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
        35                  40                  45

ctc tac cag ggc tgc cag gtg gtg cag gga aac ctg gaa ctc acc tac      430
Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
    50                  55                  60

ctg ccc acc aat gcc agc ctg tcc ttc ctg cag gat atc cag gag gtg      478
Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65                  70                  75                  80

cag ggc tac gtg ctc atc gct cac aac caa gtg agg cag gtc cca ctg      526
Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu
                85                  90                  95

cag agg ctg cgg att gtg cga ggc acc cag ctc ttt gag gac aac tat      574
Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
            100                 105                 110

gcc ctg gcc gtg cta gac aat gga gac ccg ctg aac aat acc acc cct      622
Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro
        115                 120                 125

gtc aca ggg gcc tcc cca gga ggc ctg cgg gag ctg cag ctt cga agc      670
Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser
    130                 135                 140

ctc aca gag atc ttg aaa gga ggg gtc ttg atc cag cgg aac ccc cag      718
Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln
145                 150                 155                 160

ctc tgc tac cag gac acg att ttg tgg aag gac atc ttc cac aag aac      766
Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
                165                 170                 175

aac cag ctg gct ctc aca ctg ata gac acc aac cgc tct cgg gcc tgc      814
Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys
            180                 185                 190

cac ccc tgt tct ccg atg tgt aag ggc tcc cgc tgc tgg gga gag agt      862
His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser
        195                 200                 205

tct gag gat tgt cag agc ctg acg cgc act gtc tgt gcc ggt ggc tgt      910
Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly Cys
    210                 215                 220

gcc cgc tgc aag ggg cca ctg ccc act gac tgc tgc cat gag cag tgt      958
Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys
225                 230                 235                 240

gct gcc ggc tgc acg ggc ccc aag cac tct gac tgc ctg gcc tgc ctc     1006
Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu
                245                 250                 255

cac ttc aac cac agt ggc atc tgt gag ctg cac tgc cca gcc ctg gtc     1054
His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val
            260                 265                 270
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acc tac aac aca gac acg ttt gag tcc atg ccc aat ccc gag ggc cgg     1102
Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
        275                 280                 285

tat aca ttc ggc gcc agc tgt gtg act gcc tgt ccc tac aac tac ctt     1150
Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu
    290                 295                 300

tct acg gac gtg gga tcc tgc acc ctc gtc tgc ccc ctg cac aac caa     1198
Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln
305                 310                 315                 320

gag gtg aca gca gag gat gga aca cag cgg tgt gag aag tgc agc aag     1246
Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys
                325                 330                 335

ccc tgt gcc cga gtg tgc tat ggt ctg ggc atg gag cac ttg cga gag     1294
Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu
            340                 345                 350

gtg agg gca gtt acc agt gcc aat atc cag gag ttt gct ggc tgc aag     1342
Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys
        355                 360                 365

aag atc ttt ggg agc ctg gca ttt ctg ccg gag agc ttt gat ggg gac     1390
Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp
    370                 375                 380

cca gcc tcc aac act gcc ccg ctc cag cca gag cag ctc caa gtg ttt     1438
Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln Val Phe
385                 390                 395                 400

gag act ctg gaa gag atc aca ggt tac cta tac atc tca gca tgg ccg     1486
Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro
                405                 410                 415

gac agc ctg cct gac ctc agc gtc ttc cag aac ctg caa gta atc cgg     1534
Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
            420                 425                 430

gga cga att ctg cac aat ggc gcc tac tcg ctg acc ctg caa ggg ctg     1582
Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
        435                 440                 445

ggc atc agc tgg ctg ggg ctg cgc tca ctg agg gaa ctg ggc agt gga     1630
Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly
    450                 455                 460

ctg gcc ctc atc cac cat aac acc cac ctc tgc ttc gtg cac acg gtg     1678
Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
465                 470                 475                 480

ccc tgg gac cag ctc ttt cgg aac ccg cac caa gct ctg ctc cac act     1726
Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Thr
                485                 490                 495

gcc aac cgg cca gag gac gag tgt gtg ggc gag ggc ctg gcc tgc cac     1774
Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His
            500                 505                 510
```

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cag ctg tgc gcc cga ggg cac tgc tgg ggt cca ggg ccc acc cag tgt      1822
Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln Cys
        515                 520                 525

gtc aac tgc agc cag ttc ctt cgg ggc cag gag tgc gtg gag gaa tgc      1870
Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys
    530                 535                 540

cga gta ctg cag ggg ctc ccc agg gag tat gtg aat gcc agg cac tgt      1918
Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His Cys
545                 550                 555                 560

ttg ccg tgc cac cct gag tgt cag ccc cag aat ggc tca gtg acc tgt      1966
Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr Cys
                565                 570                 575

ttt gga ccg gag gct gac cag tgt gtg gcc tgt gcc cac tat aag gac      2014
Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys Asp
            580                 585                 590

cct ccc ttc tgc gtg gcc cgc tgc ccc agc ggt gtg aaa cct gac ctc      2062
Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu
        595                 600                 605

tcc tac atg ccc atc tgg aag ttt cca gat gag gag ggc gca tgc cag      2110
Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys Gln
    610                 615                 620

cct tgc ccc atc aac tgc acc cac tcc tgt gtg gac ctg gat gac aag      2158
Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys
625                 630                 635                 640

ggc tgc ccc gcc gag cag aga gcc agc cct ctg acg tcc atc atc tct      2206
Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile Ile Ser
                645                 650                 655

gcg gtg gtt ggc att ctg ctg gtc gtg gtc ttg ggg gtg gtc ttt ggg      2254
Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Phe Gly
            660                 665                 670

atc ctc atc aag cga cgg cag cag aag atc cgg aag tac acg atg cgg      2302
Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met Arg
        675                 680                 685

aga ctg ctg cag gaa acg gag ctg gtg gag ccg ctg aca cct agc gga      2350
Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly
    690                 695                 700

gcg atg ccc aac cag gcg cag atg cgg atc ctg aaa gag acg gag ctg      2398
Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu Leu
705                 710                 715                 720

agg aag gtg aag gtg ctt gga tct ggc gct ttt ggc aca gtc tac aag      2446
Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys
                725                 730                 735

ggc atc tgg atc cct gat ggg gag aat gtg aaa att cca gtg gcc atc      2494
Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala Ile
            740                 745                 750
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aaa gtg ttg agg gaa aac aca tcc ccc aaa gcc aac aaa gaa atc tta      2542
Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu
        755                 760                 765

gac gaa gca tac gtg atg gct ggt gtg ggc tcc cca tat gtc tcc cgc      2590
Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg
    770                 775                 780

ctt ctg ggc atc tgc ctg aca tcc acg gtg cag ctg gtg aca cag ctt      2638
Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln Leu
785                 790                 795                 800

atg ccc tat ggc tgc ctc tta gac cat gtc cgg gaa aac cgc gga cgc      2686
Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly Arg
                805                 810                 815

ctg ggc tcc cag gac ctg ctg aac tgg tgt atg cag att gcc aag ggg      2734
Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys Gly
            820                 825                 830

atg agc tac ctg gag gat gtg cgg ctc gta cac agg gac ttg gcc gct      2782
Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala Ala
        835                 840                 845

cgg aac gtg ctg gtc aag agt ccc aac cat gtc aaa att aca gac ttc      2830
Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe
    850                 855                 860

ggg ctg gct cgg ctg ctg gac att gac gag aca gag tac cat gca gat      2878
Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala Asp
865                 870                 875                 880

ggg ggc aag gtg ccc atc aag tgg atg gcg ctg gag tcc att ctc cgc      2926
Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu Arg
                885                 890                 895

cgg cgg ttc acc cac cag agt gat gtg tgg agt tat ggt gtg act gtg      2974
Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val
            900                 905                 910

tgg gag ctg atg act ttt ggg gcc aaa cct tac gat ggg atc cca gcc      3022
Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro Ala
        915                 920                 925

cgg gag atc cct gac ctg ctg gaa aag ggg gag cgg ctg ccc cag ccc      3070
Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro
    930                 935                 940

ccc atc tgc acc att gat gtc tac atg atc atg gtc aaa tgt tgg atg      3118
Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met
945                 950                 955                 960

att gac tct gaa tgt cgg cca aga ttc cgg gag ttg gtg tct gaa ttc      3166
Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu Phe
                965                 970                 975

tcc cgc atg gcc agg gac ccc cag cgc ttt gtg gtc atc cag aat gag      3214
Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn Glu
            980                 985                 990
```

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gac ttg ggc cca gcc agt ccc ttg  gac agc acc ttc tac  cgc tca ctg   3262
Asp Leu Gly Pro Ala Ser Pro Leu  Asp Ser Thr Phe Tyr  Arg Ser Leu
        995                 1000                1005

ctg gag  gac gat gac atg ggg  gac ctg gtg gat gct  gag gag tat      3307
Leu Glu  Asp Asp Asp Met Gly  Asp Leu Val Asp Ala  Glu Glu Tyr
    1010                1015                1020

ctg gta  ccc cag cag ggc ttc  ttc tgt cca gac cct  gcc ccg ggc      3352
Leu Val  Pro Gln Gln Gly Phe  Phe Cys Pro Asp Pro  Ala Pro Gly
    1025                1030                1035

gct ggg  ggc atg gtc cac cac  agg cac cgc agc tca  tct acc agg      3397
Ala Gly  Gly Met Val His His  Arg His Arg Ser Ser  Ser Thr Arg
    1040                1045                1050

agt ggc  ggt ggg gac ctg aca  cta ggg ctg gag ccc  tct gaa gag      3442
Ser Gly  Gly Gly Asp Leu Thr  Leu Gly Leu Glu Pro  Ser Glu Glu
    1055                1060                1065

gag gcc  ccc agg tct cca ctg  gca ccc tcc gaa ggg  gct ggc tcc      3487
Glu Ala  Pro Arg Ser Pro Leu  Ala Pro Ser Glu Gly  Ala Gly Ser
    1070                1075                1080

gat gta  ttt gat ggt gac ctg  gga atg ggg gca gcc  aag ggg ctg      3532
Asp Val  Phe Asp Gly Asp Leu  Gly Met Gly Ala Ala  Lys Gly Leu
    1085                1090                1095

caa agc  ctc ccc aca cat gac  ccc agc cct cta cag  cgg tac agt      3577
Gln Ser  Leu Pro Thr His Asp  Pro Ser Pro Leu Gln  Arg Tyr Ser
    1100                1105                1110

gag gac  ccc aca gta ccc ctg  ccc tct gag act gat  ggc tac gtt      3622
Glu Asp  Pro Thr Val Pro Leu  Pro Ser Glu Thr Asp  Gly Tyr Val
    1115                1120                1125

gcc ccc  ctg acc tgc agc ccc  cag cct gaa tat gtg  aac cag cca      3667
Ala Pro  Leu Thr Cys Ser Pro  Gln Pro Glu Tyr Val  Asn Gln Pro
    1130                1135                1140

gat gtt  cgg ccc cag ccc cct  tcg ccc cga gag ggc  cct ctg cct      3712
Asp Val  Arg Pro Gln Pro Pro  Ser Pro Arg Glu Gly  Pro Leu Pro
    1145                1150                1155

gct gcc  cga cct gct ggt gcc  act ctg gaa agg ccc  aag act ctc      3757
Ala Ala  Arg Pro Ala Gly Ala  Thr Leu Glu Arg Pro  Lys Thr Leu
    1160                1165                1170

tcc cca  ggg aag aat ggg gtc  gtc aaa gac gtt ttt  gcc ttt ggg      3802
Ser Pro  Gly Lys Asn Gly Val  Val Lys Asp Val Phe  Ala Phe Gly
    1175                1180                1185

ggt gcc  gtg gag aac ccc gag  tac ttg aca ccc cag  gga gga gct      3847
Gly Ala  Val Glu Asn Pro Glu  Tyr Leu Thr Pro Gln  Gly Gly Ala
    1190                1195                1200

gcc cct  cag ccc cac cct cct  cct gcc ttc agc cca  gcc ttc gac      3892
Ala Pro  Gln Pro His Pro Pro  Pro Ala Phe Ser Pro  Ala Phe Asp
    1205                1210                1215
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aac ctc  tat tac tgg gac cag  gac cca cca gag cgg  ggg gct cca      3937
Asn Leu  Tyr Tyr Trp Asp Gln  Asp Pro Pro Glu Arg  Gly Ala Pro
    1220                 1225                 1230

ccc agc  acc ttc aaa ggg aca  cct acg gca gag aac  cca gag tac      3982
Pro Ser  Thr Phe Lys Gly Thr  Pro Thr Ala Glu Asn  Pro Glu Tyr
    1235                 1240                 1245

ctg ggt  ctg gac gtg cca gtg  tga accagaaggc caagtccgca            4026
Leu Gly  Leu Asp Val Pro Val
    1250                 1255

gaagccctga tgtgtcctca gggagcaggg aaggcctgac ttctgctggc atcaagaggt   4086

gggagggccc tccgaccact tccaggggaa cctgccatgc caggaacctg tcctaaggaa   4146

ccttccttcc tgcttgagtt cccagatggc tggaaggggt ccagcctcgt tggaagagga   4206

acagcactgg ggagtctttg tggattctga ggccctgccc aatgagactc tagggtccag   4266

tggatgccac agcccagctt ggccctttcc ttccagatcc tgggtactga aagccttagg   4326

gaagctggcc tgagagggga agcggcccta agggagtgtc taagaacaaa agcgacccat   4386

tcagagactg tccctgaaac ctagtactgc cccccatgag gaaggaacag caatggtgtc   4446

agtatccagg ctttgtacag agtgcttttc tgtttagttt ttacttttt tgttttgttt   4506

ttttaaagat gaaataaaga cccaggggga gaatgggtgt tgtatgggga ggcaagtgtg   4566

gggggtcctt ctccacaccc actttgtcca tttgcaaata tattttggaa aacagcta     4624
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<210> 11
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<400> 11

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Met Glu Leu Ala Ala Leu Cys Arg Trp Gly Leu Leu Leu Ala Leu Leu
1               5                  10                  15

Pro Pro Gly Ala Ala Ser Thr Gln Val Cys Thr Gly Thr Asp Met Lys
            20                  25                  30

Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
        35                  40                  45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
    50                  55                  60

Leu Pro Thr Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65                  70                  75                  80
```

```
Gln Gly Tyr Val Leu Ile Ala His Asn Gln Val Arg Gln Val Pro Leu
                85                  90                  95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Asn Tyr
            100                 105                 110

Ala Leu Ala Val Leu Asp Asn Gly Asp Pro Leu Asn Asn Thr Thr Pro
        115                 120                 125

Val Thr Gly Ala Ser Pro Gly Gly Leu Arg Glu Leu Gln Leu Arg Ser
    130                 135                 140

Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Gln Arg Asn Pro Gln
145                 150                 155                 160

Leu Cys Tyr Gln Asp Thr Ile Leu Trp Lys Asp Ile Phe His Lys Asn
                165                 170                 175

Asn Gln Leu Ala Leu Thr Leu Ile Asp Thr Asn Arg Ser Arg Ala Cys
            180                 185                 190

His Pro Cys Ser Pro Met Cys Lys Gly Ser Arg Cys Trp Gly Glu Ser
        195                 200                 205

Ser Glu Asp Cys Gln Ser Leu Thr Arg Thr Val Cys Ala Gly Gly Cys
    210                 215                 220

Ala Arg Cys Lys Gly Pro Leu Pro Thr Asp Cys Cys His Glu Gln Cys
225                 230                 235                 240

Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys Leu
                245                 250                 255

His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu Val
            260                 265                 270

Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Pro Asn Pro Glu Gly Arg
        275                 280                 285

Tyr Thr Phe Gly Ala Ser Cys Val Thr Ala Cys Pro Tyr Asn Tyr Leu
    290                 295                 300

Ser Thr Asp Val Gly Ser Cys Thr Leu Val Cys Pro Leu His Asn Gln
305                 310                 315                 320
```

Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser Lys
325 330 335

Pro Cys Ala Arg Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg Glu
340 345 350

Val Arg Ala Val Thr Ser Ala Asn Ile Gln Glu Phe Ala Gly Cys Lys
355 360 365

Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly Asp
370 375 380

Pro Ala Ser Asn Thr Ala Pro Leu Gln Pro Glu Gln Leu Gln Val Phe
385 390 395 400

Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp Pro
405 410 415

Asp Ser Leu Pro Asp Leu Ser Val Phe Gln Asn Leu Gln Val Ile Arg
420 425 430

Gly Arg Ile Leu His Asn Gly Ala Tyr Ser Leu Thr Leu Gln Gly Leu
435 440 445

Gly Ile Ser Trp Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser Gly
450 455 460

Leu Ala Leu Ile His His Asn Thr His Leu Cys Phe Val His Thr Val
465 470 475 480

Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His Thr
485 490 495

Ala Asn Arg Pro Glu Asp Glu Cys Val Gly Glu Gly Leu Ala Cys His
500 505 510

Gln Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln Cys
515 520 525

Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu Cys
530 535 540

Arg Val Leu Gln Gly Leu Pro Arg Glu Tyr Val Asn Ala Arg His Cys
545 550 555 560

Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Gly Ser Val Thr Cys
565 570 575

Phe Gly Pro Glu Ala Asp Gln Cys Val Ala Cys Ala His Tyr Lys Asp
580 585 590

Pro Pro Phe Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp Leu
595 600 605

Ser Tyr Met Pro Ile Trp Lys Phe Pro Asp Glu Glu Gly Ala Cys Gln
610 615 620

Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Asp Lys
625 630 635 640

Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Leu Thr Ser Ile Ile Ser
645 650 655

Ala Val Val Gly Ile Leu Leu Val Val Val Leu Gly Val Val Phe Gly
660 665 670

Ile Leu Ile Lys Arg Arg Gln Gln Lys Ile Arg Lys Tyr Thr Met Arg
675 680 685

Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly
690 695 700

Ala Met Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu Leu
705 710 715 720

Arg Lys Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys
725 730 735

Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala Ile
740 745 750

Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile Leu
755 760 765

Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser Arg
770 775 780

Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln Leu
785 790 795 800

```
Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu Asn Arg Gly Arg
                805                 810                 815

Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Met Gln Ile Ala Lys Gly
            820                 825                 830

Met Ser Tyr Leu Glu Asp Val Arg Leu Val His Arg Asp Leu Ala Ala
        835                 840                 845

Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe
    850                 855                 860

Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala Asp
865                 870                 875                 880

Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu Arg
                885                 890                 895

Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Val
            900                 905                 910

Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro Ala
        915                 920                 925

Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro
    930                 935                 940

Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp Met
945                 950                 955                 960

Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu Phe
                965                 970                 975

Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn Glu
            980                 985                 990

Asp Leu Gly Pro Ala Ser Pro Leu  Asp Ser Thr Phe Tyr  Arg Ser Leu
        995                 1000                1005

Leu Glu  Asp Asp Asp Met Gly  Asp Leu Val Asp Ala  Glu Glu Tyr
    1010                1015                1020

Leu Val  Pro Gln Gln Gly Phe  Phe Cys Pro Asp Pro  Ala Pro Gly
    1025                1030                1035
```

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Ala Gly  Gly Met Val His His  Arg His Arg Ser Ser  Ser Thr Arg
    1040                 1045                 1050

Ser Gly  Gly Gly Asp Leu Thr  Leu Gly Leu Glu Pro  Ser Glu Glu
    1055                 1060                 1065

Glu Ala  Pro Arg Ser Pro Leu  Ala Pro Ser Glu Gly  Ala Gly Ser
    1070                 1075                 1080

Asp Val  Phe Asp Gly Asp Leu  Gly Met Gly Ala Ala  Lys Gly Leu
    1085                 1090                 1095

Gln Ser  Leu Pro Thr His Asp  Pro Ser Pro Leu Gln  Arg Tyr Ser
    1100                 1105                 1110

Glu Asp  Pro Thr Val Pro Leu  Pro Ser Glu Thr Asp  Gly Tyr Val
    1115                 1120                 1125

Ala Pro  Leu Thr Cys Ser Pro  Gln Pro Glu Tyr Val  Asn Gln Pro
    1130                 1135                 1140

Asp Val  Arg Pro Gln Pro Pro  Ser Pro Arg Glu Gly  Pro Leu Pro
    1145                 1150                 1155

Ala Ala  Arg Pro Ala Gly Ala  Thr Leu Glu Arg Pro  Lys Thr Leu
    1160                 1165                 1170

Ser Pro  Gly Lys Asn Gly Val  Val Lys Asp Val Phe  Ala Phe Gly
    1175                 1180                 1185

Gly Ala  Val Glu Asn Pro Glu  Tyr Leu Thr Pro Gln  Gly Gly Ala
    1190                 1195                 1200

Ala Pro  Gln Pro His Pro Pro  Pro Ala Phe Ser Pro  Ala Phe Asp
    1205                 1210                 1215

Asn Leu  Tyr Tyr Trp Asp Gln  Asp Pro Pro Glu Arg  Gly Ala Pro
    1220                 1225                 1230

Pro Ser  Thr Phe Lys Gly Thr  Pro Thr Ala Glu Asn  Pro Glu Tyr
    1235                 1240                 1245

Leu Gly  Leu Asp Val Pro Val
    1250                 1255
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caggagcgcc ccttcccagg cggccccttc cggcgccgcg cctgtgcctg ccctcgccgc 120

gccccgcgcc cgcagcctgg tccagcctga gccatggggc cggagccgca gtgatcatc 179

atg gag ctg gcg gcc tgg tgc cgt tgg ggg ttc ctc ctc gcc ctc ctg 227
Met Glu Leu Ala Ala Trp Cys Arg Trp Gly Phe Leu Leu Ala Leu Leu
1 5 10 15

tcc ccc gga gcc gcg ggt acc caa gtg tgt acc ggt acc gac atg aag 275
Ser Pro Gly Ala Ala Gly Thr Gln Val Cys Thr Gly Thr Asp Met Lys
20 25 30

ttg cga ctc cct gcc agt cct gag acc cac ctg gac atg ctt cgc cac 323
Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
35 40 45

ctc tac cag ggc tgt cag gtg gtg cag ggc aat ttg gag ctt acc tac 371
Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
50 55 60

ctg ccc gcc aat gcc agc ctc tca ttc ctg cag gac atc cag gaa gtc 419
Leu Pro Ala Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65 70 75 80

cag gga tac atg ctc atc gct cac aac cga gtg aaa cac gtc cca ctg 467
Gln Gly Tyr Met Leu Ile Ala His Asn Arg Val Lys His Val Pro Leu
85 90 95

cag agg ttg cgc atc gtg aga ggg act cag ctc ttt gag gac aag tat 515
Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Lys Tyr
100 105 110

gcc ctg gct gtg cta gac aac cga gac cct ttg gac aac gtc acc acc 563
Ala Leu Ala Val Leu Asp Asn Arg Asp Pro Leu Asp Asn Val Thr Thr
115 120 125

gcc gcc cca ggc aga acc cca gaa ggg ctg cgg gag ctg cag ctt cga 611
Ala Ala Pro Gly Arg Thr Pro Glu Gly Leu Arg Glu Leu Gln Leu Arg
130 135 140

agt ctc aca gag atc ttg aag gga gga gtt ttg atc cgt ggg aac cct 659
Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Arg Gly Asn Pro
145 150 155 160

```
cag ctc tgc tac cag gac atg gtt ttg tgg aag gat gtc ctc cgt aag      707
Gln Leu Cys Tyr Gln Asp Met Val Leu Trp Lys Asp Val Leu Arg Lys
                165                 170                 175

aat aac cag ctg gct cct gtc gac atg gac acc aat cgt tcc cgg gcc      755
Asn Asn Gln Leu Ala Pro Val Asp Met Asp Thr Asn Arg Ser Arg Ala
            180                 185                 190

tgt cca cct tgt gcc cca acc tgc aaa gac aat cac tgt tgg ggt gag      803
Cys Pro Pro Cys Ala Pro Thr Cys Lys Asp Asn His Cys Trp Gly Glu
        195                 200                 205

agt cct gaa gac tgt cag atc ttg act ggc acc atc tgt act agt ggc      851
Ser Pro Glu Asp Cys Gln Ile Leu Thr Gly Thr Ile Cys Thr Ser Gly
    210                 215                 220

tgt gcc cgg tgc aag ggc cgg ctg ccc act gac tgt tgc cat gag cag      899
Cys Ala Arg Cys Lys Gly Arg Leu Pro Thr Asp Cys Cys His Glu Gln
225                 230                 235                 240

tgt gct gca ggc tgc acg ggt ccc aag cat tct gac tgc ctg gcc tgc      947
Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys
                245                 250                 255

ctc cac ttc aat cat agt ggt atc tgt gag ctg cac tgc ccg gcc ctc      995
Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu
            260                 265                 270

atc acc tac aac aca gac acc ttc gag tcc atg ctc aac cct gag ggt     1043
Ile Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Leu Asn Pro Glu Gly
        275                 280                 285

cgc tac acc ttt ggt gcc agc tgt gtg acc acc tgc ccc tac aac tac     1091
Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Thr Cys Pro Tyr Asn Tyr
    290                 295                 300

ctc tcc acg gaa gtg gga tcc tgc act ctg gtc tgt ccc ccg aac aac     1139
Leu Ser Thr Glu Val Gly Ser Cys Thr Leu Val Cys Pro Pro Asn Asn
305                 310                 315                 320

caa gag gtc aca gct gag gac gga aca cag cgg tgt gag aaa tgc agc     1187
Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser
                325                 330                 335

aag ccc tgt gct gga gta tgc tat ggt ctg ggc atg gag cac ctc cga     1235
Lys Pro Cys Ala Gly Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg
            340                 345                 350

ggg gcg agg gcc atc acc agt gac aat atc cag gag ttt gct ggc tgc     1283
Gly Ala Arg Ala Ile Thr Ser Asp Asn Ile Gln Glu Phe Ala Gly Cys
        355                 360                 365

aag aag atc ttt ggg agc ctg gca ttt ttg ccg gag agc ttt gat ggg     1331
Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly
    370                 375                 380

aac ccc tcc tcc ggc gtt gcc cca ctg aag cca gag cat ctc caa gtg     1379
Asn Pro Ser Ser Gly Val Ala Pro Leu Lys Pro Glu His Leu Gln Val
385                 390                 395                 400
```

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ttc gaa acc ctg gag gag atc aca ggt tac cta tac att tca gca tgg     1427
Phe Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp
                405                 410                 415

cca gag agc ttc caa gac ctc agt gtc ttc cag aac ctt cgg gtc att     1475
Pro Glu Ser Phe Gln Asp Leu Ser Val Phe Gln Asn Leu Arg Val Ile
            420                 425                 430

cgg gga cgg att ctc cat gat ggt gct tac tca ttg acg ttg caa ggc     1523
Arg Gly Arg Ile Leu His Asp Gly Ala Tyr Ser Leu Thr Leu Gln Gly
        435                 440                 445

ctg ggg att cac tca ctg ggg cta cgc tca ctg cgg gag ctg ggc agt     1571
Leu Gly Ile His Ser Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser
    450                 455                 460

gga ttg gct ctc att cac cgc aac acc cat ctc tgc ttt gta aac act     1619
Gly Leu Ala Leu Ile His Arg Asn Thr His Leu Cys Phe Val Asn Thr
465                 470                 475                 480

gta cct tgg gac cag ctc ttc cgg aac ccg cac cag gcc cta ctc cac     1667
Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His
                485                 490                 495

agt ggg aac cgg cca gaa gag gca tgt ggt ctt gag ggc ttg gtc tgt     1715
Ser Gly Asn Arg Pro Glu Glu Ala Cys Gly Leu Glu Gly Leu Val Cys
            500                 505                 510

aac tca ctg tgt gcc cgt ggg cac tgc tgg ggg cca ggg ccc acc cag     1763
Asn Ser Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln
        515                 520                 525

tgt gtc aac tgc agt cag ttc ctc cgg ggc cag gag tgt gtg gag gag     1811
Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu
    530                 535                 540

tgc cga gta tgg aag ggg ctc ccc agg gag tat gtg agg ggc aag cac     1859
Cys Arg Val Trp Lys Gly Leu Pro Arg Glu Tyr Val Arg Gly Lys His
545                 550                 555                 560

tgt ctg cca tgc cac ccc gag tgt cag cct caa aac agc tcg gag acc     1907
Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Ser Ser Glu Thr
                565                 570                 575

tgc tat gga tcg gag gct gac cag tgt gag gct tgt gcc cac tac aag     1955
Cys Tyr Gly Ser Glu Ala Asp Gln Cys Glu Ala Cys Ala His Tyr Lys
            580                 585                 590

gac tca tct tcc tgt gtg gct cgc tgc ccc agt ggt gtg aag cca gac     2003
Asp Ser Ser Ser Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp
        595                 600                 605

ctc tcc tac atg cct atc tgg aag tac ccg gat gag gag ggc ata tgt     2051
Leu Ser Tyr Met Pro Ile Trp Lys Tyr Pro Asp Glu Glu Gly Ile Cys
    610                 615                 620

cag cca tgc ccc atc aac tgc acc cac tca tgt gtg gac ctg gac gaa     2099
Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Glu
625                 630                 635                 640
```

```
cga ggc tgc cca gca gag cag aga gcc agc cca gtg aca ttc atc att     2147
Arg Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Val Thr Phe Ile Ile
                645                 650                 655

gca act gtg gtg ggc gtc ctg ttg ttc ctg atc ata gtg gtg gtc att     2195
Ala Thr Val Val Gly Val Leu Leu Phe Leu Ile Ile Val Val Val Ile
            660                 665                 670

gga atc cta atc aaa cga agg cga cag aag atc cgg aag tat acc atg     2243
Gly Ile Leu Ile Lys Arg Arg Arg Gln Lys Ile Arg Lys Tyr Thr Met
        675                 680                 685

cgt agg ctg ctg cag gag acc gag ctg gtg gag ccg ctg acg ccc agt     2291
Arg Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser
    690                 695                 700

gga gct gtg ccc aac cag gct cag atg cgg atc cta aag gag aca gag     2339
Gly Ala Val Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu
705                 710                 715                 720

cta agg aag ctg aag gtg ctt ggg tca gga gcc ttc ggc act gtc tac     2387
Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr
                725                 730                 735

aag ggc atc tgg atc cca gat ggg gag aac gtg aaa atc ccc gtg gcc     2435
Lys Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala
            740                 745                 750

atc aag gtg ttg agg gaa aac aca tct cct aaa gct aac aaa gaa atc     2483
Ile Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile
        755                 760                 765

cta gat gaa gcg tac gtc atg gct ggt gtg ggt tct cca tat gtg tcc     2531
Leu Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser
    770                 775                 780

cgc ctc ctg ggc atc tgc ctg aca tcc aca gtg cag ctg gtg aca cag     2579
Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln
785                 790                 795                 800

ctt atg ccc tat ggc tgc ctt ctg gac cat gtc cga gaa cac cga ggt     2627
Leu Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu His Arg Gly
                805                 810                 815

cgc tta ggc tcc cag gac ctg ctc aac tgg tgt gtt cag att gcc aag     2675
Arg Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Val Gln Ile Ala Lys
            820                 825                 830

ggg atg agc tac ctg gag gaa gtt cgg ctt gtt cac agg gac cta gct     2723
Gly Met Ser Tyr Leu Glu Glu Val Arg Leu Val His Arg Asp Leu Ala
        835                 840                 845

gcc cga aac gtg cta gtc aag agt ccc aac cac gtc aag att acc gac     2771
Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp
    850                 855                 860

ttc ggg ctg gca cgg ctg ctg gac att gat gag act gaa tac cat gca     2819
Phe Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala
865                 870                 875                 880
```

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gat ggg ggc aag gtg ccc atc aag tgg atg gca ttg gaa tct att ctc     2867
Asp Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu
                885                 890                 895

aga cgc cgg ttc acc cat cag agt gat gtg tgg agc tat ggt gtg act     2915
Arg Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr
            900                 905                 910

gtg tgg gag ctg atg acc ttt ggg gcc aaa cct tac gat ggg atc cca     2963
Val Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro
        915                 920                 925

gct cgg gag atc cct gat ttg ctg gag aag gga gaa cgc cta cct cag     3011
Ala Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln
    930                 935                 940

cct cca atc tgc acc atc gac gtc tac atg atc atg gtc aaa tgt tgg     3059
Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp
945                 950                 955                 960

atg att gac tcc gaa tgt cgc ccg aga ttc cgg gag ttg gta tca gaa     3107
Met Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu
                965                 970                 975

ttc tcc cgt atg gca agg gac ccc cag cgc ttt gtg gtc atc cag aac     3155
Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn
            980                 985                 990

gag gac tta ggc ccc tcc agc ccc  atg gac agc acc ttc  tac cgt tca   3203
Glu Asp Leu Gly Pro Ser Ser Pro  Met Asp Ser Thr Phe  Tyr Arg Ser
        995                 1000                1005

ctg ctg  gag gat gat gac atg  ggg gag ctg gtc gat  gct gaa gag      3248
Leu Leu  Glu Asp Asp Asp Met  Gly Glu Leu Val Asp  Ala Glu Glu
    1010                1015                1020

tac ctg  gta ccc cag cag gga  ttc ttc tcc cca gac  cct gcc cta      3293
Tyr Leu  Val Pro Gln Gln Gly  Phe Phe Ser Pro Asp  Pro Ala Leu
    1025                1030                1035

ggt act  ggg agc aca gcc cac  cgc aga cac cgc agc  tcg tcg gcc      3338
Gly Thr  Gly Ser Thr Ala His  Arg Arg His Arg Ser  Ser Ser Ala
    1040                1045                1050

agg agt  ggc ggt ggt gag ctg  aca ctg ggc ctg gag  ccc tcg gaa      3383
Arg Ser  Gly Gly Gly Glu Leu  Thr Leu Gly Leu Glu  Pro Ser Glu
    1055                1060                1065

gaa gag  ccc ccc aga tct cca  ctg gct ccc tcc gaa  ggg gct ggc      3428
Glu Glu  Pro Pro Arg Ser Pro  Leu Ala Pro Ser Glu  Gly Ala Gly
    1070                1075                1080

tcc gat  gtg ttt gat ggt gac  ctg gca gtg ggg gta  acc aaa gga      3473
Ser Asp  Val Phe Asp Gly Asp  Leu Ala Val Gly Val  Thr Lys Gly
    1085                1090                1095

ctg cag  agc ctc tct cca cat  gac ctc agc cct cta  cag cgg tac      3518
Leu Gln  Ser Leu Ser Pro His  Asp Leu Ser Pro Leu  Gln Arg Tyr
    1100                1105                1110
```

```
agt gag  gat ccc aca tta cct  ctg ccc ccc gag act  gat ggc tac      3563
Ser Glu  Asp Pro Thr Leu Pro  Leu Pro Pro Glu Thr  Asp Gly Tyr
    1115                 1120                 1125

gtt gct  ccc ctg gcc tgc agc  ccc cag ccc gag tat  gtg aac cag      3608
Val Ala  Pro Leu Ala Cys Ser  Pro Gln Pro Glu Tyr  Val Asn Gln
    1130                 1135                 1140

cca gag  gtt cgg cct cag tct  ccc ttg acc cca gag  ggt cct ccg      3653
Pro Glu  Val Arg Pro Gln Ser  Pro Leu Thr Pro Glu  Gly Pro Pro
    1145                 1150                 1155

cct ccc  atc cga cct gct ggt  gct act cta gaa aga  ccc aag act      3698
Pro Pro  Ile Arg Pro Ala Gly  Ala Thr Leu Glu Arg  Pro Lys Thr
    1160                 1165                 1170

ctc tct  cct ggg aaa aat ggg  gtt gtc aaa gac gtt  ttt gcc ttt      3743
Leu Ser  Pro Gly Lys Asn Gly  Val Val Lys Asp Val  Phe Ala Phe
    1175                 1180                 1185

ggg ggt  gct gtg gag aac cct  gaa tac tta gca ccc  aga gca ggc      3788
Gly Gly  Ala Val Glu Asn Pro  Glu Tyr Leu Ala Pro  Arg Ala Gly
    1190                 1195                 1200

act gcc  tct cag ccc cac cct  tct cct gcc ttc agc  cca gcc ttt      3833
Thr Ala  Ser Gln Pro His Pro  Ser Pro Ala Phe Ser  Pro Ala Phe
    1205                 1210                 1215

gac aac  ctc tat tac tgg gac  cag aac tca tcg gag  cag ggt cct      3878
Asp Asn  Leu Tyr Tyr Trp Asp  Gln Asn Ser Ser Glu  Gln Gly Pro
    1220                 1225                 1230

cca cca  agt acc ttt gaa ggg  acc ccc act gca gag  aac cct gag      3923
Pro Pro  Ser Thr Phe Glu Gly  Thr Pro Thr Ala Glu  Asn Pro Glu
    1235                 1240                 1245

tac cta  ggc ctg gat gtg cca  gta tga ggtcacatgt gcagacatcc        3970
Tyr Leu  Gly Leu Asp Val Pro  Val
    1250                 1255

tctgtcttca gagtggggaa ggaaggccta acttgtggtc tccatcgccc gccacaaagc   4030

agggagaagg tcctctggcc acatgacatc cagggcagcc ggctatgcca ggaacgtgcc   4090

ctgaggaacc tcgctcgatg cttcaatcct gagtggttaa gagggccccg cctggccgga   4150

agagacagca cactgttcag ccccagagga ttacagaccc tgactgccct gacagactgt   4210

agggtccagt gggtattcct tacctggcct ggctctcttg gttctgaaga ctgagggaag   4270

ctcagcctgc aagggaggag gccccaggtg aatatcctgg gagcaggaca ccccactagg   4330

actgaggcac gtgcatccca agaggggggac agcacttgca cccagactgg tctttgtaca   4390

gagtttattt tgttctgttt ttacttttgt tttttgtttt ttttttaaag atgaaataag   4450

gatacagtgg gagagtgggt gttatatgaa agtcgggggg tgctgtcccc tttctccatt   4510

tgcaatgaga tttgtaaaat aactggaccc cagcctatgt ctgagagtgg tcccgggccg   4570
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ggtcaaaccg tattgctcat ctgacacaca gctcctcctg gagtgagtgt gtagagatct 4630

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tgaaggccct ttggcaacag ggtcattctc cgttggacac actcatacca aggctacccc 4750

cagaatactc cgttggacac actcattcca aggctacccc cagaatgaag tcctgtcctc 4810

ccagtgggag aggggagctt gtggagagca ttgccatgtg acttgttttc cttgccttag 4870

aaagaagtat ccatccagga aaaccccacc cactaggtgt tagtcccacc cactaggtgt 4930

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1 5 10 15

Ser Pro Gly Ala Ala Gly Thr Gln Val Cys Thr Gly Thr Asp Met Lys
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Leu Arg Leu Pro Ala Ser Pro Glu Thr His Leu Asp Met Leu Arg His
35 40 45

Leu Tyr Gln Gly Cys Gln Val Val Gln Gly Asn Leu Glu Leu Thr Tyr
50 55 60

Leu Pro Ala Asn Ala Ser Leu Ser Phe Leu Gln Asp Ile Gln Glu Val
65 70 75 80

Gln Gly Tyr Met Leu Ile Ala His Asn Arg Val Lys His Val Pro Leu
85 90 95

Gln Arg Leu Arg Ile Val Arg Gly Thr Gln Leu Phe Glu Asp Lys Tyr
100 105 110

Ala Leu Ala Val Leu Asp Asn Arg Asp Pro Leu Asp Asn Val Thr Thr
115 120 125

Ala Ala Pro Gly Arg Thr Pro Glu Gly Leu Arg Glu Leu Gln Leu Arg
130 135 140

```
Ser Leu Thr Glu Ile Leu Lys Gly Gly Val Leu Ile Arg Gly Asn Pro
145                 150                 155                 160

Gln Leu Cys Tyr Gln Asp Met Val Leu Trp Lys Asp Val Leu Arg Lys
                165                 170                 175

Asn Asn Gln Leu Ala Pro Val Asp Met Asp Thr Asn Arg Ser Arg Ala
            180                 185                 190

Cys Pro Pro Cys Ala Pro Thr Cys Lys Asp Asn His Cys Trp Gly Glu
        195                 200                 205

Ser Pro Glu Asp Cys Gln Ile Leu Thr Gly Thr Ile Cys Thr Ser Gly
    210                 215                 220

Cys Ala Arg Cys Lys Gly Arg Leu Pro Thr Asp Cys Cys His Glu Gln
225                 230                 235                 240

Cys Ala Ala Gly Cys Thr Gly Pro Lys His Ser Asp Cys Leu Ala Cys
                245                 250                 255

Leu His Phe Asn His Ser Gly Ile Cys Glu Leu His Cys Pro Ala Leu
            260                 265                 270

Ile Thr Tyr Asn Thr Asp Thr Phe Glu Ser Met Leu Asn Pro Glu Gly
        275                 280                 285

Arg Tyr Thr Phe Gly Ala Ser Cys Val Thr Thr Cys Pro Tyr Asn Tyr
    290                 295                 300

Leu Ser Thr Glu Val Gly Ser Cys Thr Leu Val Cys Pro Pro Asn Asn
305                 310                 315                 320

Gln Glu Val Thr Ala Glu Asp Gly Thr Gln Arg Cys Glu Lys Cys Ser
                325                 330                 335

Lys Pro Cys Ala Gly Val Cys Tyr Gly Leu Gly Met Glu His Leu Arg
            340                 345                 350

Gly Ala Arg Ala Ile Thr Ser Asp Asn Ile Gln Glu Phe Ala Gly Cys
        355                 360                 365

Lys Lys Ile Phe Gly Ser Leu Ala Phe Leu Pro Glu Ser Phe Asp Gly
    370                 375                 380
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Asn Pro Ser Ser Gly Val Ala Pro Leu Lys Pro Glu His Leu Gln Val
385                 390                 395                 400

Phe Glu Thr Leu Glu Glu Ile Thr Gly Tyr Leu Tyr Ile Ser Ala Trp
                405                 410                 415

Pro Glu Ser Phe Gln Asp Leu Ser Val Phe Gln Asn Leu Arg Val Ile
            420                 425                 430

Arg Gly Arg Ile Leu His Asp Gly Ala Tyr Ser Leu Thr Leu Gln Gly
        435                 440                 445

Leu Gly Ile His Ser Leu Gly Leu Arg Ser Leu Arg Glu Leu Gly Ser
    450                 455                 460

Gly Leu Ala Leu Ile His Arg Asn Thr His Leu Cys Phe Val Asn Thr
465                 470                 475                 480

Val Pro Trp Asp Gln Leu Phe Arg Asn Pro His Gln Ala Leu Leu His
                485                 490                 495

Ser Gly Asn Arg Pro Glu Glu Ala Cys Gly Leu Glu Gly Leu Val Cys
            500                 505                 510

Asn Ser Leu Cys Ala Arg Gly His Cys Trp Gly Pro Gly Pro Thr Gln
        515                 520                 525

Cys Val Asn Cys Ser Gln Phe Leu Arg Gly Gln Glu Cys Val Glu Glu
    530                 535                 540

Cys Arg Val Trp Lys Gly Leu Pro Arg Glu Tyr Val Arg Gly Lys His
545                 550                 555                 560

Cys Leu Pro Cys His Pro Glu Cys Gln Pro Gln Asn Ser Ser Glu Thr
                565                 570                 575

Cys Tyr Gly Ser Glu Ala Asp Gln Cys Glu Ala Cys Ala His Tyr Lys
            580                 585                 590

Asp Ser Ser Ser Cys Val Ala Arg Cys Pro Ser Gly Val Lys Pro Asp
        595                 600                 605

Leu Ser Tyr Met Pro Ile Trp Lys Tyr Pro Asp Glu Glu Gly Ile Cys
    610                 615                 620
```

```
Gln Pro Cys Pro Ile Asn Cys Thr His Ser Cys Val Asp Leu Asp Glu
625                 630                 635                 640

Arg Gly Cys Pro Ala Glu Gln Arg Ala Ser Pro Val Thr Phe Ile Ile
                645                 650                 655

Ala Thr Val Val Gly Val Leu Leu Phe Leu Ile Ile Val Val Val Ile
            660                 665                 670

Gly Ile Leu Ile Lys Arg Arg Arg Gln Lys Ile Arg Lys Tyr Thr Met
        675                 680                 685

Arg Arg Leu Leu Gln Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser
    690                 695                 700

Gly Ala Val Pro Asn Gln Ala Gln Met Arg Ile Leu Lys Glu Thr Glu
705                 710                 715                 720

Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr
                725                 730                 735

Lys Gly Ile Trp Ile Pro Asp Gly Glu Asn Val Lys Ile Pro Val Ala
            740                 745                 750

Ile Lys Val Leu Arg Glu Asn Thr Ser Pro Lys Ala Asn Lys Glu Ile
        755                 760                 765

Leu Asp Glu Ala Tyr Val Met Ala Gly Val Gly Ser Pro Tyr Val Ser
    770                 775                 780

Arg Leu Leu Gly Ile Cys Leu Thr Ser Thr Val Gln Leu Val Thr Gln
785                 790                 795                 800

Leu Met Pro Tyr Gly Cys Leu Leu Asp His Val Arg Glu His Arg Gly
                805                 810                 815

Arg Leu Gly Ser Gln Asp Leu Leu Asn Trp Cys Val Gln Ile Ala Lys
            820                 825                 830

Gly Met Ser Tyr Leu Glu Glu Val Arg Leu Val His Arg Asp Leu Ala
        835                 840                 845

Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp
    850                 855                 860
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Phe Gly Leu Ala Arg Leu Leu Asp Ile Asp Glu Thr Glu Tyr His Ala
865                 870                 875                 880

Asp Gly Gly Lys Val Pro Ile Lys Trp Met Ala Leu Glu Ser Ile Leu
                885                 890                 895

Arg Arg Arg Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr
            900                 905                 910

Val Trp Glu Leu Met Thr Phe Gly Ala Lys Pro Tyr Asp Gly Ile Pro
        915                 920                 925

Ala Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln
    930                 935                 940

Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Ile Met Val Lys Cys Trp
945                 950                 955                 960

Met Ile Asp Ser Glu Cys Arg Pro Arg Phe Arg Glu Leu Val Ser Glu
                965                 970                 975

Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Phe Val Val Ile Gln Asn
            980                 985                 990

Glu Asp Leu Gly Pro Ser Ser Pro  Met Asp Ser Thr Phe  Tyr Arg Ser
        995                 1000                1005

Leu Leu  Glu Asp Asp Asp Met  Gly Glu Leu Val Asp  Ala Glu Glu
    1010                1015                1020

Tyr Leu  Val Pro Gln Gln Gly  Phe Phe Ser Pro Asp  Pro Ala Leu
    1025                1030                1035

Gly Thr  Gly Ser Thr Ala His  Arg Arg His Arg Ser  Ser Ser Ala
    1040                1045                1050

Arg Ser  Gly Gly Gly Glu Leu  Thr Leu Gly Leu Glu  Pro Ser Glu
    1055                1060                1065

Glu Glu  Pro Pro Arg Ser Pro  Leu Ala Pro Ser Glu  Gly Ala Gly
    1070                1075                1080

Ser Asp  Val Phe Asp Gly Asp  Leu Ala Val Gly Val  Thr Lys Gly
    1085                1090                1095
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Leu Gln  Ser Leu Ser Pro His  Asp Leu Ser Pro Leu  Gln Arg Tyr
    1100                 1105                 1110

Ser Glu  Asp Pro Thr Leu Pro  Leu Pro Pro Glu Thr  Asp Gly Tyr
    1115                 1120                 1125

Val Ala  Pro Leu Ala Cys Ser  Pro Gln Pro Glu Tyr  Val Asn Gln
    1130                 1135                 1140

Pro Glu  Val Arg Pro Gln Ser  Pro Leu Thr Pro Glu  Gly Pro Pro
    1145                 1150                 1155

Pro Pro  Ile Arg Pro Ala Gly  Ala Thr Leu Glu Arg  Pro Lys Thr
    1160                 1165                 1170

Leu Ser  Pro Gly Lys Asn Gly  Val Val Lys Asp Val  Phe Ala Phe
    1175                 1180                 1185

Gly Gly  Ala Val Glu Asn Pro  Glu Tyr Leu Ala Pro  Arg Ala Gly
    1190                 1195                 1200

Thr Ala  Ser Gln Pro His Pro  Ser Pro Ala Phe Ser  Pro Ala Phe
    1205                 1210                 1215

Asp Asn  Leu Tyr Tyr Trp Asp  Gln Asn Ser Ser Glu  Gln Gly Pro
    1220                 1225                 1230

Pro Pro  Ser Thr Phe Glu Gly  Thr Pro Thr Ala Glu  Asn Pro Glu
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Tyr Leu  Gly Leu Asp Val Pro  Val
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atttgcaacc tccgctgccg tcgccgcagc agccaccaat tcgccagcgg ttcaggtggc 120

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tcttgcctcg atgtcctagc ctaggggccc ccgggccgga cttggctggg ctcccttcac    180

cctctgcgga gtc atg agg gcg aac gac gct ctg cag gtg ctg ggc ttg        229
               Met Arg Ala Asn Asp Ala Leu Gln Val Leu Gly Leu
               1               5                   10

ctt ttc agc ctg gcc cgg ggc tcc gag gtg ggc aac tct cag gca gtg       277
Leu Phe Ser Leu Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val
        15                  20                  25

tgt cct ggg act ctg aat ggc ctg agt gtg acc ggc gat gct gag aac       325
Cys Pro Gly Thr Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn
    30                  35                  40

caa tac cag aca ctg tac aag ctc tac gag agg tgt gag gtg gtg atg       373
Gln Tyr Gln Thr Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met
45                  50                  55                  60

ggg aac ctt gag att gtg ctc acg gga cac aat gcc gac ctc tcc ttc       421
Gly Asn Leu Glu Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe
                65                  70                  75

ctg cag tgg att cga gaa gtg aca ggc tat gtc ctc gtg gcc atg aat       469
Leu Gln Trp Ile Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn
            80                  85                  90

gaa ttc tct act cta cca ttg ccc aac ctc cgc gtg gtg cga ggg acc       517
Glu Phe Ser Thr Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr
        95                  100                 105

cag gtc tac gat ggg aag ttt gcc atc ttc gtc atg ttg aac tat aac       565
Gln Val Tyr Asp Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn
    110                 115                 120

acc aac tcc agc cac gct ctg cgc cag ctc cgc ttg act cag ctc acc       613
Thr Asn Ser Ser His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr
125                 130                 135                 140

gag att ctg tca ggg ggt gtt tat att gag aag aac gat aag ctt tgt       661
Glu Ile Leu Ser Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys
                145                 150                 155

cac atg gac aca att gac tgg agg gac atc gtg agg gac cga gat gct       709
His Met Asp Thr Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala
            160                 165                 170

gag ata gtg gtg aag gac aat ggc aga agc tgt ccc ccc tgt cat gag       757
Glu Ile Val Val Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu
        175                 180                 185

gtt tgc aag ggg cga tgc tgg ggt cct gga tca gaa gac tgc cag aca       805
Val Cys Lys Gly Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr
    190                 195                 200

ttg acc aag acc atc tgt gct cct cag tgt aat ggt cac tgc ttt ggg       853
Leu Thr Lys Thr Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly
205                 210                 215                 220
```

```
ccc aac ccc aac cag tgc tgc cat gat gag tgt gcc ggg ggc tgc tca      901
Pro Asn Pro Asn Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser
                225                 230                 235

ggc cct cag gac aca gac tgc ttt gcc tgc cgg cac ttc aat gac agt      949
Gly Pro Gln Asp Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser
            240                 245                 250

gga gcc tgt gta cct cgc tgt cca cag cct ctt gtc tac aac aag cta      997
Gly Ala Cys Val Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu
        255                 260                 265

act ttc cag ctg gaa ccc aat ccc cac acc aag tat cag tat gga gga     1045
Thr Phe Gln Leu Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly
    270                 275                 280

gtt tgt gta gcc agc tgt ccc cat aac ttt gtg gtg gat caa aca tcc     1093
Val Cys Val Ala Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser
285                 290                 295                 300

tgt gtc agg gcc tgt cct cct gac aag atg gaa gta gat aaa aat ggg     1141
Cys Val Arg Ala Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly
                305                 310                 315

ctc aag atg tgt gag cct tgt ggg gga cta tgt ccc aaa gcc tgt gag     1189
Leu Lys Met Cys Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu
            320                 325                 330

gga aca ggc tct ggg agc cgc ttc cag act gtg gac tcg agc aac att     1237
Gly Thr Gly Ser Gly Ser Arg Phe Gln Thr Val Asp Ser Ser Asn Ile
        335                 340                 345

gat gga ttt gtg aac tgc acc aag atc ctg ggc aac ctg gac ttt ctg     1285
Asp Gly Phe Val Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu
    350                 355                 360

atc acc ggc ctc aat gga gac ccc tgg cac aag atc cct gcc ctg gac     1333
Ile Thr Gly Leu Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp
365                 370                 375                 380

cca gag aag ctc aat gtc ttc cgg aca gta cgg gag atc aca ggt tac     1381
Pro Glu Lys Leu Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr
                385                 390                 395

ctg aac atc cag tcc tgg ccg ccc cac atg cac aac ttc agt gtt ttt     1429
Leu Asn Ile Gln Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe
            400                 405                 410

tcc aat ttg aca acc att gga ggc aga agc ctc tac aac cgg ggc ttc     1477
Ser Asn Leu Thr Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe
        415                 420                 425

tca ttg ttg atc atg aag aac ttg aat gtc aca tct ctg ggc ttc cga     1525
Ser Leu Leu Ile Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg
    430                 435                 440

tcc ctg aag gaa att agt gct ggg cgt atc tat ata agt gcc aat agg     1573
Ser Leu Lys Glu Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg
445                 450                 455                 460
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cag ctc tgc tac cac cac tct ttg aac tgg acc aag gtg ctt cgg ggg     1621
Gln Leu Cys Tyr His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly
                465                 470                 475

cct acg gaa gag cga cta gac atc aag cat aat cgg ccg cgc aga gac     1669
Pro Thr Glu Glu Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp
            480                 485                 490

tgc gtg gca gag ggc aaa gtg tgt gac cca ctg tgc tcc tct ggg gga     1717
Cys Val Ala Glu Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly
        495                 500                 505

tgc tgg ggc cca ggc cct ggt cag tgc ttg tcc tgt cga aat tat agc     1765
Cys Trp Gly Pro Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser
    510                 515                 520

cga gga ggt gtc tgt gtg acc cac tgc aac ttt ctg aat ggg gag cct     1813
Arg Gly Gly Val Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro
525                 530                 535                 540

cga gaa ttt gcc cat gag gcc gaa tgc ttc tcc tgc cac ccg gaa tgc     1861
Arg Glu Phe Ala His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys
                545                 550                 555

caa ccc atg gag ggc act gcc aca tgc aat ggc tcg ggc tct gat act     1909
Gln Pro Met Glu Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr
            560                 565                 570

tgt gct caa tgt gcc cat ttt cga gat ggg ccc cac tgt gtg agc agc     1957
Cys Ala Gln Cys Ala His Phe Arg Asp Gly Pro His Cys Val Ser Ser
        575                 580                 585

tgc ccc cat gga gtc cta ggt gcc aag ggc cca atc tac aag tac cca     2005
Cys Pro His Gly Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro
    590                 595                 600

gat gtt cag aat gaa tgt cgg ccc tgc cat gag aac tgc acc cag ggg     2053
Asp Val Gln Asn Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly
605                 610                 615                 620

tgt aaa gga cca gag ctt caa gac tgt tta gga caa aca ctg gtg ctg     2101
Cys Lys Gly Pro Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu
                625                 630                 635

atc ggc aaa acc cat ctg aca atg gct ttg aca gtg ata gca gga ttg     2149
Ile Gly Lys Thr His Leu Thr Met Ala Leu Thr Val Ile Ala Gly Leu
            640                 645                 650

gta gtg att ttc atg atg ctg ggc ggc act ttt ctc tac tgg cgt ggg     2197
Val Val Ile Phe Met Met Leu Gly Gly Thr Phe Leu Tyr Trp Arg Gly
        655                 660                 665

cgc cgg att cag aat aaa agg gct atg agg cga tac ttg gaa cgg ggt     2245
Arg Arg Ile Gln Asn Lys Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly
    670                 675                 680

gag agc ata gag cct ctg gac ccc agt gag aag gct aac aaa gtc ttg     2293
Glu Ser Ile Glu Pro Leu Asp Pro Ser Glu Lys Ala Asn Lys Val Leu
685                 690                 695                 700
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```
gcc aga atc ttc aaa gag aca gag cta agg aag ctt aaa gtg ctt ggc     2341
Ala Arg Ile Phe Lys Glu Thr Glu Leu Arg Lys Leu Lys Val Leu Gly
                705                 710                 715

tcg ggt gtc ttt gga act gtg cac aaa gga gtg tgg atc cct gag ggt     2389
Ser Gly Val Phe Gly Thr Val His Lys Gly Val Trp Ile Pro Glu Gly
            720                 725                 730

gaa tca atc aag att cca gtc tgc att aaa gtc att gag gac aag agt     2437
Glu Ser Ile Lys Ile Pro Val Cys Ile Lys Val Ile Glu Asp Lys Ser
        735                 740                 745

gga cgg cag agt ttt caa gct gtg aca gat cat atg ctg gcc att ggc     2485
Gly Arg Gln Ser Phe Gln Ala Val Thr Asp His Met Leu Ala Ile Gly
    750                 755                 760

agc ctg gac cat gcc cac att gta agg ctg ctg gga cta tgc cca ggg     2533
Ser Leu Asp His Ala His Ile Val Arg Leu Leu Gly Leu Cys Pro Gly
765                 770                 775                 780

tca tct ctg cag ctt gtc act caa tat ttg cct ctg ggt tct ctg ctg     2581
Ser Ser Leu Gln Leu Val Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu
                785                 790                 795

gat cat gtg aga caa cac cgg ggg gca ctg ggg cca cag ctg ctg ctc     2629
Asp His Val Arg Gln His Arg Gly Ala Leu Gly Pro Gln Leu Leu Leu
            800                 805                 810

aac tgg gga gta caa att gcc aag gga atg tac tac ctt gag gaa cat     2677
Asn Trp Gly Val Gln Ile Ala Lys Gly Met Tyr Tyr Leu Glu Glu His
        815                 820                 825

ggt atg gtg cat aga aac ctg gct gcc cga aac gtg cta ctc aag tca     2725
Gly Met Val His Arg Asn Leu Ala Ala Arg Asn Val Leu Leu Lys Ser
    830                 835                 840

ccc agt cag gtt cag gtg gca gat ttt ggt gtg gct gac ctg ctg cct     2773
Pro Ser Gln Val Gln Val Ala Asp Phe Gly Val Ala Asp Leu Leu Pro
845                 850                 855                 860

cct gat gat aag cag ctg cta tac agt gag gcc aag act cca att aag     2821
Pro Asp Asp Lys Gln Leu Leu Tyr Ser Glu Ala Lys Thr Pro Ile Lys
                865                 870                 875

tgg atg gcc ctt gag agt atc cac ttt ggg aaa tac aca cac cag agt     2869
Trp Met Ala Leu Glu Ser Ile His Phe Gly Lys Tyr Thr His Gln Ser
            880                 885                 890

gat gtc tgg agc tat ggt gtg aca gtt tgg gag ttg atg acc ttc ggg     2917
Asp Val Trp Ser Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly
        895                 900                 905

gca gag ccc tat gca ggg cta cga ttg gct gaa gta cca gac ctg cta     2965
Ala Glu Pro Tyr Ala Gly Leu Arg Leu Ala Glu Val Pro Asp Leu Leu
    910                 915                 920

gag aag ggg gag cgg ttg gca cag ccc cag atc tgc aca att gat gtc     3013
Glu Lys Gly Glu Arg Leu Ala Gln Pro Gln Ile Cys Thr Ile Asp Val
925                 930                 935                 940
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tac atg gtg atg gtc aag tgt tgg atg att gat gag aac att cgc cca     3061
Tyr Met Val Met Val Lys Cys Trp Met Ile Asp Glu Asn Ile Arg Pro
                945                 950                 955

acc ttt aaa gaa cta gcc aat gag ttc acc agg atg gcc cga gac cca     3109
Thr Phe Lys Glu Leu Ala Asn Glu Phe Thr Arg Met Ala Arg Asp Pro
            960                 965                 970

cca cgg tat ctg gtc ata aag aga gag agt ggg cct gga ata gcc cct     3157
Pro Arg Tyr Leu Val Ile Lys Arg Glu Ser Gly Pro Gly Ile Ala Pro
        975                 980                 985

ggg cca gag ccc cat ggt ctg aca aac aag aag cta  gag gaa gta gag    3205
Gly Pro Glu Pro His Gly Leu Thr Asn Lys Lys Leu  Glu Glu Val Glu
    990                 995                 1000

ctg  gag cca gaa cta gac  cta gac cta gac ttg  gaa gca gag gag      3250
Leu  Glu Pro Glu Leu Asp  Leu Asp Leu Asp Leu  Glu Ala Glu Glu
1005                1010                1015

gac  aac ctg gca acc acc  aca ctg ggc tcc gcc  ctc agc cta cca      3295
Asp  Asn Leu Ala Thr Thr  Thr Leu Gly Ser Ala  Leu Ser Leu Pro
1020                1025                1030

gtt  gga aca ctt aat cgg  cca cgt ggg agc cag  agc ctt tta agt      3340
Val  Gly Thr Leu Asn Arg  Pro Arg Gly Ser Gln  Ser Leu Leu Ser
1035                1040                1045

cca  tca tct gga tac atg  ccc atg aac cag ggt  aat ctt ggg gag      3385
Pro  Ser Ser Gly Tyr Met  Pro Met Asn Gln Gly  Asn Leu Gly Glu
1050                1055                1060

tct  tgc cag gag tct gca  gtt tct ggg agc agt  gaa cgg tgc ccc      3430
Ser  Cys Gln Glu Ser Ala  Val Ser Gly Ser Ser  Glu Arg Cys Pro
1065                1070                1075

cgt  cca gtc tct cta cac  cca atg cca cgg gga  tgc ctg gca tca      3475
Arg  Pro Val Ser Leu His  Pro Met Pro Arg Gly  Cys Leu Ala Ser
1080                1085                1090

gag  tca tca gag ggg cat  gta aca ggc tct gag  gct gag ctc cag      3520
Glu  Ser Ser Glu Gly His  Val Thr Gly Ser Glu  Ala Glu Leu Gln
1095                1100                1105

gag  aaa gtg tca atg tgt  agg agc cgg agc agg  agc cgg agc cca      3565
Glu  Lys Val Ser Met Cys  Arg Ser Arg Ser Arg  Ser Arg Ser Pro
1110                1115                1120

cgg  cca cgc gga gat agc  gcc tac cat tcc cag  cgc cac agt ctg      3610
Arg  Pro Arg Gly Asp Ser  Ala Tyr His Ser Gln  Arg His Ser Leu
1125                1130                1135

ctg  act cct gtt acc cca  ctc tcc cca ccc ggg  tta gag gaa gag      3655
Leu  Thr Pro Val Thr Pro  Leu Ser Pro Pro Gly  Leu Glu Glu Glu
1140                1145                1150

gat  gtc aac ggt tat gtc  atg cca gat aca cac  ctc aaa ggt act      3700
Asp  Val Asn Gly Tyr Val  Met Pro Asp Thr His  Leu Lys Gly Thr
1155                1160                1165
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ccc  tcc tcc cgg gaa ggc  acc ctt tct tca gtg  ggt ctc agt tct      3745
Pro  Ser Ser Arg Glu Gly  Thr Leu Ser Ser Val  Gly Leu Ser Ser
1170                 1175                 1180

gtc  ctg ggt act gaa gaa  gaa gat gaa gat gag  gag tat gaa tac      3790
Val  Leu Gly Thr Glu Glu  Glu Asp Glu Asp Glu  Glu Tyr Glu Tyr
1185                 1190                 1195

atg  aac cgg agg aga agg  cac agt cca cct cat  ccc cct agg cca      3835
Met  Asn Arg Arg Arg Arg  His Ser Pro Pro His  Pro Pro Arg Pro
1200                 1205                 1210

agt  tcc ctt gag gag ctg  ggt tat gag tac atg  gat gtg ggg tca      3880
Ser  Ser Leu Glu Glu Leu  Gly Tyr Glu Tyr Met  Asp Val Gly Ser
1215                 1220                 1225

gac  ctc agt gcc tct ctg  ggc agc aca cag agt  tgc cca ctc cac      3925
Asp  Leu Ser Ala Ser Leu  Gly Ser Thr Gln Ser  Cys Pro Leu His
1230                 1235                 1240

cct  gta ccc atc atg ccc  act gca ggc aca act  cca gat gaa gac      3970
Pro  Val Pro Ile Met Pro  Thr Ala Gly Thr Thr  Pro Asp Glu Asp
1245                 1250                 1255

tat  gaa tat atg aat cgg  caa cga gat gga ggt  ggt cct ggg ggt      4015
Tyr  Glu Tyr Met Asn Arg  Gln Arg Asp Gly Gly  Gly Pro Gly Gly
1260                 1265                 1270

gat  tat gca gcc atg ggg  gcc tgc cca gca tct  gag caa ggg tat      4060
Asp  Tyr Ala Ala Met Gly  Ala Cys Pro Ala Ser  Glu Gln Gly Tyr
1275                 1280                 1285

gaa  gag atg aga gct ttt  cag ggg cct gga cat  cag gcc ccc cat      4105
Glu  Glu Met Arg Ala Phe  Gln Gly Pro Gly His  Gln Ala Pro His
1290                 1295                 1300

gtc  cat tat gcc cgc cta  aaa act cta cgt agc  tta gag gct aca      4150
Val  His Tyr Ala Arg Leu  Lys Thr Leu Arg Ser  Leu Glu Ala Thr
1305                 1310                 1315

gac  tct gcc ttt gat aac  cct gat tac tgg cat  agc agg ctt ttc      4195
Asp  Ser Ala Phe Asp Asn  Pro Asp Tyr Trp His  Ser Arg Leu Phe
1320                 1325                 1330

ccc  aag gct aat gcc cag  aga acg taa ctcctgctcc ctgtggcact        4242
Pro  Lys Ala Asn Ala Gln  Arg Thr
1335                 1340

cagggagcat ttaatggcag ctagtgcctt tagagggtac cgtcttctcc ctattccctc  4302

tctctcccag gtcccagccc cttttcccca gtcccagaca attccattca atctttggag  4362

gcttttaaac attttgacac aaaattctta tggtatgtag ccagctgtgc actttcttct  4422

ctttcccaac cccaggaaag gttttcctta ttttgtgtgc tttcccagtc ccattcctca  4482

gcttcttcac aggcactcct ggagatatga aggattactc tccatatccc ttcctctcag  4542

gctcttgact acttggaact aggctcttat gtgtgccttt gtttcccatc agactgtcaa  4602
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gaagaggaaa gggaggaaac ctagcagagg aaagtgtaat tttggtttat gactcttaac 4662

cccctagaaa gacagaagct taaaatctgt gaagaaagag gttaggagta gatattgatt 4722

actatcataa ttcagcactt aactatgagc caggcatcat actaaacttc acctacatta 4782

tctcacttag tcctttatca tccttaaaac aattctgtga catacatatt atctcatttt 4842

acacaaaggg aagtcgggca tggtggctca tgcctgtaat ctcagcactt tgggaggctg 4902

aggcagaagg attacctgag gcaaggagtt tgagaccagc ttagccaaca tagtaagacc 4962

cccatctctt taaaaaaaaa aaaaaaaaaa aaaaaaaaac tttagaactg ggtgcagtgg 5022

ctcatgcctg taatcccagc cagcactttg ggaggctgag atgggaagat cacttgagcc 5082

cagaattaga gataagccta tggaaacata gcaagacact gtctctacag gggaaaaaaa 5142

aaaaagaaac tgagccttaa agagatgaaa taaattaagc agtagatcca ggatgcaaaa 5202

tcctcccaat tcctgtgcat gtgctcttat tgtaaggtgc caagaaaaac tgatttaagt 5262

tacagccctt gtttaagggg cactgtttct tgtttttgca ctgaatcaag tctaacccca 5322

acagccacat cctcctatac ctagacatct catctcagga agtggtggtg ggggtagtca 5382

gaaggaaaaa taactggaca tctttgtgta aaccataatc cacatgtgcc gtaaatgatc 5442

ttcactcctt atccgagggc aaattcacaa ggatccccaa gatccacttt tagaagccat 5502

tctcatcca 5511

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Met Arg Ala Asn Asp Ala Leu Gln Val Leu Gly Leu Leu Phe Ser Leu
1 5 10 15

Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
20 25 30

Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
35 40 45

Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
50 55 60

Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65 70 75 80

```
Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
                85                  90                  95

Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
            100                 105                 110

Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
        115                 120                 125

His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
    130                 135                 140

Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145                 150                 155                 160

Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
                165                 170                 175

Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys Lys Gly
            180                 185                 190

Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr Leu Thr Lys Thr
        195                 200                 205

Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
    210                 215                 220

Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225                 230                 235                 240

Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
                245                 250                 255

Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
            260                 265                 270

Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
        275                 280                 285

Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser Cys Val Arg Ala
    290                 295                 300

Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305                 310                 315                 320
```

Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
325 330 335

Gly Ser Arg Phe Gln Thr Val Asp Ser Ser Asn Ile Asp Gly Phe Val
340 345 350

Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
355 360 365

Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
370 375 380

Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr Leu Asn Ile Gln
385 390 395 400

Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
405 410 415

Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
420 425 430

Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
435 440 445

Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg Gln Leu Cys Tyr
450 455 460

His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
465 470 475 480

Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
485 490 495

Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
500 505 510

Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
515 520 525

Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro Arg Glu Phe Ala
530 535 540

His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545 550 555 560

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Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr Cys Ala Gln Cys
                565                 570                 575

Ala His Phe Arg Asp Gly Pro His Cys Val Ser Ser Cys Pro His Gly
            580                 585                 590

Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Val Gln Asn
        595                 600                 605

Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
    610                 615                 620

Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu Ile Gly Lys Thr
625                 630                 635                 640

His Leu Thr Met Ala Leu Thr Val Ile Ala Gly Leu Val Val Ile Phe
                645                 650                 655

Met Met Leu Gly Gly Thr Phe Leu Tyr Trp Arg Gly Arg Arg Ile Gln
            660                 665                 670

Asn Lys Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly Glu Ser Ile Glu
        675                 680                 685

Pro Leu Asp Pro Ser Glu Lys Ala Asn Lys Val Leu Ala Arg Ile Phe
    690                 695                 700

Lys Glu Thr Glu Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Val Phe
705                 710                 715                 720

Gly Thr Val His Lys Gly Val Trp Ile Pro Glu Gly Glu Ser Ile Lys
                725                 730                 735

Ile Pro Val Cys Ile Lys Val Ile Glu Asp Lys Ser Gly Arg Gln Ser
            740                 745                 750

Phe Gln Ala Val Thr Asp His Met Leu Ala Ile Gly Ser Leu Asp His
        755                 760                 765

Ala His Ile Val Arg Leu Leu Gly Leu Cys Pro Gly Ser Ser Leu Gln
    770                 775                 780

Leu Val Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu Asp His Val Arg
785                 790                 795                 800
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Gln His Arg Gly Ala Leu Gly Pro Gln Leu Leu Leu Asn Trp Gly Val
                805                 810                 815

Gln Ile Ala Lys Gly Met Tyr Tyr Leu Glu Glu His Gly Met Val His
            820                 825                 830

Arg Asn Leu Ala Ala Arg Asn Val Leu Leu Lys Ser Pro Ser Gln Val
        835                 840                 845

Gln Val Ala Asp Phe Gly Val Ala Asp Leu Leu Pro Pro Asp Asp Lys
    850                 855                 860

Gln Leu Leu Tyr Ser Glu Ala Lys Thr Pro Ile Lys Trp Met Ala Leu
865                 870                 875                 880

Glu Ser Ile His Phe Gly Lys Tyr Thr His Gln Ser Asp Val Trp Ser
                885                 890                 895

Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ala Glu Pro Tyr
            900                 905                 910

Ala Gly Leu Arg Leu Ala Glu Val Pro Asp Leu Leu Glu Lys Gly Glu
        915                 920                 925

Arg Leu Ala Gln Pro Gln Ile Cys Thr Ile Asp Val Tyr Met Val Met
    930                 935                 940

Val Lys Cys Trp Met Ile Asp Glu Asn Ile Arg Pro Thr Phe Lys Glu
945                 950                 955                 960

Leu Ala Asn Glu Phe Thr Arg Met Ala Arg Asp Pro Pro Arg Tyr Leu
                965                 970                 975

Val Ile Lys Arg Glu Ser Gly Pro Gly Ile Ala Pro Gly Pro Glu Pro
            980                 985                 990

His Gly Leu Thr Asn Lys Lys Leu  Glu Glu Val Glu Leu  Glu Pro Glu
        995                 1000                1005

Leu Asp  Leu Asp Leu Asp Leu  Glu Ala Glu Glu Asp  Asn Leu Ala
    1010                1015                1020

Thr Thr  Thr Leu Gly Ser Ala  Leu Ser Leu Pro Val  Gly Thr Leu
    1025                1030                1035
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Asn Arg Pro Arg Gly Ser Gln Ser Leu Leu Ser Pro Ser Ser Gly
1040 1045 1050

Tyr Met Pro Met Asn Gln Gly Asn Leu Gly Glu Ser Cys Gln Glu
1055 1060 1065

Ser Ala Val Ser Gly Ser Ser Glu Arg Cys Pro Arg Pro Val Ser
1070 1075 1080

Leu His Pro Met Pro Arg Gly Cys Leu Ala Ser Glu Ser Ser Glu
1085 1090 1095

Gly His Val Thr Gly Ser Glu Ala Glu Leu Gln Glu Lys Val Ser
1100 1105 1110

Met Cys Arg Ser Arg Ser Arg Ser Arg Ser Pro Arg Pro Arg Gly
1115 1120 1125

Asp Ser Ala Tyr His Ser Gln Arg His Ser Leu Leu Thr Pro Val
1130 1135 1140

Thr Pro Leu Ser Pro Pro Gly Leu Glu Glu Glu Asp Val Asn Gly
1145 1150 1155

Tyr Val Met Pro Asp Thr His Leu Lys Gly Thr Pro Ser Ser Arg
1160 1165 1170

Glu Gly Thr Leu Ser Ser Val Gly Leu Ser Ser Val Leu Gly Thr
1175 1180 1185

Glu Glu Glu Asp Glu Asp Glu Glu Tyr Glu Tyr Met Asn Arg Arg
1190 1195 1200

Arg Arg His Ser Pro Pro His Pro Pro Arg Pro Ser Ser Leu Glu
1205 1210 1215

Glu Leu Gly Tyr Glu Tyr Met Asp Val Gly Ser Asp Leu Ser Ala
1220 1225 1230

Ser Leu Gly Ser Thr Gln Ser Cys Pro Leu His Pro Val Pro Ile
1235 1240 1245

Met Pro Thr Ala Gly Thr Thr Pro Asp Glu Asp Tyr Glu Tyr Met
1250 1255 1260

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Asn Arg  Gln Arg Asp Gly Gly  Gly Pro Gly Gly Asp  Tyr Ala Ala
    1265                1270                1275

Met Gly  Ala Cys Pro Ala Ser  Glu Gln Gly Tyr Glu  Glu Met Arg
    1280                1285                1290

Ala Phe  Gln Gly Pro Gly His  Gln Ala Pro His Val  His Tyr Ala
    1295                1300                1305

Arg Leu  Lys Thr Leu Arg Ser  Leu Glu Ala Thr Asp  Ser Ala Phe
    1310                1315                1320

Asp Asn  Pro Asp Tyr Trp His  Ser Arg Leu Phe Pro  Lys Ala Asn
    1325                1330                1335

Ala Gln  Arg Thr
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Met Ser Ala Ile Gly Thr Leu Gln Val Leu Gly Phe Leu Leu Ser Leu
1               5                   10                  15

gcc cgg ggt tcc gag atg ggc aac tct cag gca gta tgt cct ggg act       96
Ala Arg Gly Ser Glu Met Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
            20                  25                  30

cta aac ggg ctg agt gtg acc ggc gat gct gac aac cag tac cag aca      144
Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Asp Asn Gln Tyr Gln Thr
        35                  40                  45

ctg tac aaa ctc tat gag aag tgt gag gtg gtc atg ggt aac ctg gag      192
Leu Tyr Lys Leu Tyr Glu Lys Cys Glu Val Val Met Gly Asn Leu Glu
    50                  55                  60

att gtg ctt acg gga cac aat gct gat ctt tcc ttc ctg caa tgg atc      240
Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65                  70                  75                  80

cga gaa gtg aca ggc tat gta ctg gtg gcc atg aat gaa ttc tct gta      288
Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Val
                85                  90                  95
```

```
ctg ccc tta cct aac ctc cga gtg gtc cgg gga acc cag gtc tac gat      336
Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
            100                 105                 110

ggg aag ttt gcc atc ttt gtc atg ttg aac tac aat acc aac tcc agc      384
Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
        115                 120                 125

cat gct ctg cgc cag ctc cgg ttc act cag ctt act gag att ctg tta      432
His Ala Leu Arg Gln Leu Arg Phe Thr Gln Leu Thr Glu Ile Leu Leu
    130                 135                 140

ggg ggc gtt tac att gag aag aat gac aaa ctt tgc cac atg gat aca      480
Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145                 150                 155                 160

att gac tgg agg gac atc gtg agg gtt cca gac gct gag ata gtg gtg      528
Ile Asp Trp Arg Asp Ile Val Arg Val Pro Asp Ala Glu Ile Val Val
                165                 170                 175

aag aac aac ggg ggg aac tgt cca ccc tgt cac gaa gtc tgc aag ggg      576
Lys Asn Asn Gly Gly Asn Cys Pro Pro Cys His Glu Val Cys Lys Gly
            180                 185                 190

cga tgc tgg ggg cct gga cca gaa gac tgc cag ata ttg acc aag acc      624
Arg Cys Trp Gly Pro Gly Pro Glu Asp Cys Gln Ile Leu Thr Lys Thr
        195                 200                 205

atc tgt gcc cct cag tgt aac ggt cgc tgc ttc ggg ccc aat cct aac      672
Ile Cys Ala Pro Gln Cys Asn Gly Arg Cys Phe Gly Pro Asn Pro Asn
    210                 215                 220

cag tgc tgc cac gat gaa tgt gca ggt ggc tgc tct gga ccc cag gac      720
Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225                 230                 235                 240

aca gat tgc ttc gcc tgc cga cac ttc aat gac agt ggt gcc tgt gtg      768
Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
                245                 250                 255

ccc agg tgt cca gcg ccc ctt gtg tac aac aag cta acg ttc cag ctt      816
Pro Arg Cys Pro Ala Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
            260                 265                 270

gag ccc aac ccc cat atc aag tat cag tac gga gga gtc tgt gtt gcc      864
Glu Pro Asn Pro His Ile Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
        275                 280                 285

agt tgt ccc cat aac ttt gtg gtg gat cag aca ttt tgt gtc agg gct      912
Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Phe Cys Val Arg Ala
    290                 295                 300

tgt cct gct gac aag atg gaa gta gat aag aat gga ctc aag atg tgt      960
Cys Pro Ala Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305                 310                 315                 320

gag cct tgc aga ggg ctg tgc cca aaa gcc tgt gag ggg acg ggc tct     1008
Glu Pro Cys Arg Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
                325                 330                 335
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gga agc cgc tac cag acc gtg gac tct agc aat atc gat ggg ttc gtg     1056
Gly Ser Arg Tyr Gln Thr Val Asp Ser Ser Asn Ile Asp Gly Phe Val
            340                 345                 350

aac tgt acc aag atc ctg ggc aac ctg gac ttc ctc atc act ggc ctc     1104
Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
        355                 360                 365

aat ggt gac ccc tgg cac aag atc cct gca ctg gac ccg gaa aag ctc     1152
Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
    370                 375                 380

aat gtt ttc agg aca gtc cgg gag att aca ggc tac cta aac atc cag     1200
Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr Leu Asn Ile Gln
385                 390                 395                 400

tcc tgg ccc cct cac atg cac aac ttc agt gtt ttt tcc aac ctg acg     1248
Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
                405                 410                 415

acc atc ggg ggc aga agc ctc tac aat cgg ggc ttc tcc ttg ttg atc     1296
Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
            420                 425                 430

atg aag aac ttg aat gtc acg tct ctg ggc ttc cgg tcc ctg aag gaa     1344
Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
        435                 440                 445

att agt gct ggg cgt gtc tac ata agt gcc aat cag caa ctt tgt tac     1392
Ile Ser Ala Gly Arg Val Tyr Ile Ser Ala Asn Gln Gln Leu Cys Tyr
    450                 455                 460

cac cac tct ctg aac tgg acc aga ctt ctg cgg ggg ccc gca gag gag     1440
His His Ser Leu Asn Trp Thr Arg Leu Leu Arg Gly Pro Ala Glu Glu
465                 470                 475                 480

aga ctt gac atc aag tac aac cgg cct ctg gga gaa tgc gtg gca gag     1488
Arg Leu Asp Ile Lys Tyr Asn Arg Pro Leu Gly Glu Cys Val Ala Glu
                485                 490                 495

ggc aaa gtg tgt gat cca ctg tgc tcc tct ggg gga tgc tgg ggc cca     1536
Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
            500                 505                 510

ggc cct ggt cag tgc ttg tct tgt cga aac tac agc cgg gaa ggt gtc     1584
Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Glu Gly Val
        515                 520                 525

tgt gtg act cac tgc aac gtt ctg caa ggg gaa ccc cga gag ttt gtt     1632
Cys Val Thr His Cys Asn Val Leu Gln Gly Glu Pro Arg Glu Phe Val
    530                 535                 540

cat gag gct cat tgc ttc tcc tgc cat cca gaa tgc cag ccc atg gag     1680
His Glu Ala His Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545                 550                 555                 560

ggc acc agc acg tgc aat ggc tcg ggc tcc gac gct tgt gct cga tgc     1728
Gly Thr Ser Thr Cys Asn Gly Ser Gly Ser Asp Ala Cys Ala Arg Cys
                565                 570                 575
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gcc cat ttt cgt gat ggg ccc cac tgt gtg aac agc tgc ccc cat gga      1776
Ala His Phe Arg Asp Gly Pro His Cys Val Asn Ser Cys Pro His Gly
            580                 585                 590

atc cta ggt gcc aaa ggt cca atc tac aaa tat cca gat gct cag aat      1824
Ile Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Ala Gln Asn
        595                 600                 605

gag tgc cgg ccc tgc cac gag aac tgc acc caa ggg tgt aag gga cca      1872
Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
    610                 615                 620

gaa cta caa gac tgt tta ggc caa gca gag gta tta atg agc aaa cca      1920
Glu Leu Gln Asp Cys Leu Gly Gln Ala Glu Val Leu Met Ser Lys Pro
625                 630                 635                 640

cac ctg gtc ata gcg gtg aca gta gga ctg act gtg atc ttc ctg att      1968
His Leu Val Ile Ala Val Thr Val Gly Leu Thr Val Ile Phe Leu Ile
                645                 650                 655

ctg gga ggc tct ttt ctc tat tgg cgt gga cgc agg att cag aat aaa      2016
Leu Gly Gly Ser Phe Leu Tyr Trp Arg Gly Arg Arg Ile Gln Asn Lys
            660                 665                 670

agg gct atg aga cgc tac ttg gag cgg ggt gag agc atc gag cct ctg      2064
Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly Glu Ser Ile Glu Pro Leu
        675                 680                 685

gac cca agc gag aag gca aac aaa gtc ttg gct aga atc ttc aaa gag      2112
Asp Pro Ser Glu Lys Ala Asn Lys Val Leu Ala Arg Ile Phe Lys Glu
    690                 695                 700

aca gag ctg agg aaa ctt aag gtg ctt ggc tct ggt gtc ttt gga act      2160
Thr Glu Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Val Phe Gly Thr
705                 710                 715                 720

gta cac aag ggg att tgg att ccc gag ggt gaa tcc atc aag att cca      2208
Val His Lys Gly Ile Trp Ile Pro Glu Gly Glu Ser Ile Lys Ile Pro
                725                 730                 735

gtc tgc att aaa gtc atc gag gac aag agt ggg cgg cag agt ttt cag      2256
Val Cys Ile Lys Val Ile Glu Asp Lys Ser Gly Arg Gln Ser Phe Gln
            740                 745                 750

gct gtg act gat cac atg ctg gcc gtc ggc agc ctg gac cat gcc cac      2304
Ala Val Thr Asp His Met Leu Ala Val Gly Ser Leu Asp His Ala His
        755                 760                 765

att gta cgg ctg ctg gga ctg tgc cca ggg tca tct ctg cag ctt gtc      2352
Ile Val Arg Leu Leu Gly Leu Cys Pro Gly Ser Ser Leu Gln Leu Val
    770                 775                 780

act cag tac ttg cct ctg ggc tct ctc ctt gat cat gta aga cag cac      2400
Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu Asp His Val Arg Gln His
785                 790                 795                 800

cgt gag aca ctg gga cca cag ctg ctg ctc aac tgg gga gta caa att      2448
Arg Glu Thr Leu Gly Pro Gln Leu Leu Leu Asn Trp Gly Val Gln Ile
                805                 810                 815
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gcc aag ggt atg tat tac ctc gag gaa cac agc atg gtg cat agg gac     2496
Ala Lys Gly Met Tyr Tyr Leu Glu Glu His Ser Met Val His Arg Asp
            820                 825                 830

ctt gcg ctc cgg aat gtg atg ctt aag tca ccg agt caa gtc cag gtg     2544
Leu Ala Leu Arg Asn Val Met Leu Lys Ser Pro Ser Gln Val Gln Val
        835                 840                 845

gca gat ttt ggt gtg gct gac ttg ctg ccg cca gat gac aag cag tta     2592
Ala Asp Phe Gly Val Ala Asp Leu Leu Pro Pro Asp Asp Lys Gln Leu
    850                 855                 860

cta cac agt gag gcc aag act cca att aaa tgg atg gcc ctt gag agt     2640
Leu His Ser Glu Ala Lys Thr Pro Ile Lys Trp Met Ala Leu Glu Ser
865                 870                 875                 880

atc cac ttt ggg aaa tac aca cac cag agt gat gtc tgg agt tac ggt     2688
Ile His Phe Gly Lys Tyr Thr His Gln Ser Asp Val Trp Ser Tyr Gly
                885                 890                 895

gta acc gtt tgg gag ttg atg acc ttc ggg gca gag ccc tac gca ggg     2736
Val Thr Val Trp Glu Leu Met Thr Phe Gly Ala Glu Pro Tyr Ala Gly
            900                 905                 910

cta cga ctg gct gaa ata cca gac ctg ctg gag aag gga gag cgg tta     2784
Leu Arg Leu Ala Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu
        915                 920                 925

gca cag ccc cag atc tgc acc att gac gtc tac atg gtc atg gtc aag     2832
Ala Gln Pro Gln Ile Cys Thr Ile Asp Val Tyr Met Val Met Val Lys
    930                 935                 940

tgt tgg atg att gac gag aat att cgc cca acc ttt aaa gaa ctg gcc     2880
Cys Trp Met Ile Asp Glu Asn Ile Arg Pro Thr Phe Lys Glu Leu Ala
945                 950                 955                 960

aat gag ttt acc agg atg gcc cgg gac cca cca agg tat ctg gtc atc     2928
Asn Glu Phe Thr Arg Met Ala Arg Asp Pro Pro Arg Tyr Leu Val Ile
                965                 970                 975

aag aga gcg agt ggg cct gga ata cct cct gca gca gag cca tct gct     2976
Lys Arg Ala Ser Gly Pro Gly Ile Pro Pro Ala Ala Glu Pro Ser Ala
            980                 985                 990

ctg agc acc aaa gag ttg cag gat  gca gag ctg gag cca  gac ctg gac   3024
Leu Ser Thr Lys Glu Leu Gln Asp  Ala Glu Leu Glu Pro  Asp Leu Asp
        995                 1000                1005

ctc gac  cta gac gtg gag gta  gaa gag gag ggc ctg  gcg acc aca      3069
Leu Asp  Leu Asp Val Glu Val  Glu Glu Glu Gly Leu  Ala Thr Thr
    1010                1015                1020

ctg ggt  tct gcc ctc agc ttg  cct aca gga acg ctt  acc cgg cca      3114
Leu Gly  Ser Ala Leu Ser Leu  Pro Thr Gly Thr Leu  Thr Arg Pro
    1025                1030                1035

cgt ggg  agc cag agt ctt tta  agt cct tcg tct gga  tac atg ccc      3159
Arg Gly  Ser Gln Ser Leu Leu  Ser Pro Ser Ser Gly  Tyr Met Pro
    1040                1045                1050
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atg aac  cag agc aac ctt ggg  gag gct tgt ctg gat  tct gcg gtt      3204
Met Asn  Gln Ser Asn Leu Gly  Glu Ala Cys Leu Asp  Ser Ala Val
    1055                 1060                 1065

ttg ggg  ggt cgc gaa cag ttc  tcc cgt ccc atc tct  ctg cac ccg      3249
Leu Gly  Gly Arg Glu Gln Phe  Ser Arg Pro Ile Ser  Leu His Pro
    1070                 1075                 1080

atc cca  cgg ggg cgt caa acg  tca gag tca tca gag  ggc cat gtg      3294
Ile Pro  Arg Gly Arg Gln Thr  Ser Glu Ser Ser Glu  Gly His Val
    1085                 1090                 1095

acg ggc  tct gag gct gaa ctc  caa gag aga gta tca  atg tgt agg      3339
Thr Gly  Ser Glu Ala Glu Leu  Gln Glu Arg Val Ser  Met Cys Arg
    1100                 1105                 1110

agc cgg  agc cgg agc cgg agc  cca cgg cca cgt ggg  gac agt gcc      3384
Ser Arg  Ser Arg Ser Arg Ser  Pro Arg Pro Arg Gly  Asp Ser Ala
    1115                 1120                 1125

tac cat  tcg cag cga cac agc  ctg ctt act ccc gtc  acc ccg ctc      3429
Tyr His  Ser Gln Arg His Ser  Leu Leu Thr Pro Val  Thr Pro Leu
    1130                 1135                 1140

tcc cca  cca ggg tta gag gaa  gag gat ggc aat ggt  tat gtc atg      3474
Ser Pro  Pro Gly Leu Glu Glu  Glu Asp Gly Asn Gly  Tyr Val Met
    1145                 1150                 1155

cca gat  acg cac ctc aga ggt  aca tcc tct tcc cgg  gaa ggc acc      3519
Pro Asp  Thr His Leu Arg Gly  Thr Ser Ser Ser Arg  Glu Gly Thr
    1160                 1165                 1170

ctt tcg  tca gta ggt ctc agt  tct gtg ctg ggt acc  gaa gag gaa      3564
Leu Ser  Ser Val Gly Leu Ser  Ser Val Leu Gly Thr  Glu Glu Glu
    1175                 1180                 1185

gat gaa  gat gag gag tat gaa  tac atg aac cgg aag  agg agg ggt      3609
Asp Glu  Asp Glu Glu Tyr Glu  Tyr Met Asn Arg Lys  Arg Arg Gly
    1190                 1195                 1200

agc ccg  gct cgg ccc ccc aga  cct ggt tcc ctg gaa  gag ctg ggc      3654
Ser Pro  Ala Arg Pro Pro Arg  Pro Gly Ser Leu Glu  Glu Leu Gly
    1205                 1210                 1215

tat gag  tac atg gat gtg ggt  tca gac ctc agt gct  tct ctg ggc      3699
Tyr Glu  Tyr Met Asp Val Gly  Ser Asp Leu Ser Ala  Ser Leu Gly
    1220                 1225                 1230

agt acg  cag agt tgc cca ctc  cat ccc atg gcc atc  gtg ccc tct      3744
Ser Thr  Gln Ser Cys Pro Leu  His Pro Met Ala Ile  Val Pro Ser
    1235                 1240                 1245

gct ggc  acg act cca gat gag  gac tat gaa tac atg  aac cgc agg      3789
Ala Gly  Thr Thr Pro Asp Glu  Asp Tyr Glu Tyr Met  Asn Arg Arg
    1250                 1255                 1260

cgt ggt  gcg ggc ggt tcc gga  ggg gat tat gca gct  atg ggg gcc      3834
Arg Gly  Ala Gly Gly Ser Gly  Gly Asp Tyr Ala Ala  Met Gly Ala
    1265                 1270                 1275
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tgc cca  gca gct gaa caa ggg  tat gag gaa atg cga  gct ttc cag      3879
Cys Pro  Ala Ala Glu Gln Gly  Tyr Glu Glu Met Arg  Ala Phe Gln
    1280                 1285                 1290

ggg cct  gga cat caa gcc ccc  cat gtt cgt tat gcc  cgc ctc aaa      3924
Gly Pro  Gly His Gln Ala Pro  His Val Arg Tyr Ala  Arg Leu Lys
    1295                 1300                 1305

act ctg  cgt agt tta gaa gcc  act gac tcc gcc ttt  gac aac ccc      3969
Thr Leu  Arg Ser Leu Glu Ala  Thr Asp Ser Ala Phe  Asp Asn Pro
    1310                 1315                 1320

gat tac  tgg cat agc agg ctt  ttc cct aag gct aac  gcc cag aga      4014
Asp Tyr  Trp His Ser Arg Leu  Phe Pro Lys Ala Asn  Ala Gln Arg
    1325                 1330                 1335

att tga                                                          4020
Ile
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<210> 17
<211> 1339
<212> PRT
<213> Mus musculus

<400> 17

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Met Ser Ala Ile Gly Thr Leu Gln Val Leu Gly Phe Leu Leu Ser Leu
1               5                  10                  15

Ala Arg Gly Ser Glu Met Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
            20                  25                  30

Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Asp Asn Gln Tyr Gln Thr
        35                  40                  45

Leu Tyr Lys Leu Tyr Glu Lys Cys Glu Val Val Met Gly Asn Leu Glu
    50                  55                  60

Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65                  70                  75                  80

Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Val
                85                  90                  95

Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
            100                 105                 110

Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
        115                 120                 125
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His Ala Leu Arg Gln Leu Arg Phe Thr Gln Leu Thr Glu Ile Leu Leu
    130                 135                 140

Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145                 150                 155                 160

Ile Asp Trp Arg Asp Ile Val Arg Val Pro Asp Ala Glu Ile Val Val
                165                 170                 175

Lys Asn Asn Gly Gly Asn Cys Pro Pro Cys His Glu Val Cys Lys Gly
            180                 185                 190

Arg Cys Trp Gly Pro Gly Pro Glu Asp Cys Gln Ile Leu Thr Lys Thr
        195                 200                 205

Ile Cys Ala Pro Gln Cys Asn Gly Arg Cys Phe Gly Pro Asn Pro Asn
    210                 215                 220

Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225                 230                 235                 240

Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
                245                 250                 255

Pro Arg Cys Pro Ala Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
            260                 265                 270

Glu Pro Asn Pro His Ile Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
        275                 280                 285

Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Phe Cys Val Arg Ala
    290                 295                 300

Cys Pro Ala Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305                 310                 315                 320

Glu Pro Cys Arg Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
                325                 330                 335

Gly Ser Arg Tyr Gln Thr Val Asp Ser Ser Asn Ile Asp Gly Phe Val
            340                 345                 350

Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
        355                 360                 365
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Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
    370                 375                 380

Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr Leu Asn Ile Gln
385                 390                 395                 400

Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
                405                 410                 415

Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
            420                 425                 430

Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
        435                 440                 445

Ile Ser Ala Gly Arg Val Tyr Ile Ser Ala Asn Gln Gln Leu Cys Tyr
    450                 455                 460

His His Ser Leu Asn Trp Thr Arg Leu Leu Arg Gly Pro Ala Glu Glu
465                 470                 475                 480

Arg Leu Asp Ile Lys Tyr Asn Arg Pro Leu Gly Glu Cys Val Ala Glu
                485                 490                 495

Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
            500                 505                 510

Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Glu Gly Val
        515                 520                 525

Cys Val Thr His Cys Asn Val Leu Gln Gly Glu Pro Arg Glu Phe Val
    530                 535                 540

His Glu Ala His Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545                 550                 555                 560

Gly Thr Ser Thr Cys Asn Gly Ser Gly Ser Asp Ala Cys Ala Arg Cys
                565                 570                 575

Ala His Phe Arg Asp Gly Pro His Cys Val Asn Ser Cys Pro His Gly
            580                 585                 590

Ile Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Ala Gln Asn
        595                 600                 605
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Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
    610                 615                 620

Glu Leu Gln Asp Cys Leu Gly Gln Ala Glu Val Leu Met Ser Lys Pro
625                 630                 635                 640

His Leu Val Ile Ala Val Thr Val Gly Leu Thr Val Ile Phe Leu Ile
                645                 650                 655

Leu Gly Gly Ser Phe Leu Tyr Trp Arg Gly Arg Arg Ile Gln Asn Lys
            660                 665                 670

Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly Glu Ser Ile Glu Pro Leu
        675                 680                 685

Asp Pro Ser Glu Lys Ala Asn Lys Val Leu Ala Arg Ile Phe Lys Glu
    690                 695                 700

Thr Glu Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Val Phe Gly Thr
705                 710                 715                 720

Val His Lys Gly Ile Trp Ile Pro Glu Gly Glu Ser Ile Lys Ile Pro
                725                 730                 735

Val Cys Ile Lys Val Ile Glu Asp Lys Ser Gly Arg Gln Ser Phe Gln
            740                 745                 750

Ala Val Thr Asp His Met Leu Ala Val Gly Ser Leu Asp His Ala His
        755                 760                 765

Ile Val Arg Leu Leu Gly Leu Cys Pro Gly Ser Ser Leu Gln Leu Val
    770                 775                 780

Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu Asp His Val Arg Gln His
785                 790                 795                 800

Arg Glu Thr Leu Gly Pro Gln Leu Leu Leu Asn Trp Gly Val Gln Ile
                805                 810                 815

Ala Lys Gly Met Tyr Tyr Leu Glu Glu His Ser Met Val His Arg Asp
            820                 825                 830

Leu Ala Leu Arg Asn Val Met Leu Lys Ser Pro Ser Gln Val Gln Val
        835                 840                 845
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Ala Asp Phe Gly Val Ala Asp Leu Leu Pro Pro Asp Asp Lys Gln Leu
    850                 855                 860

Leu His Ser Glu Ala Lys Thr Pro Ile Lys Trp Met Ala Leu Glu Ser
865                 870                 875                 880

Ile His Phe Gly Lys Tyr Thr His Gln Ser Asp Val Trp Ser Tyr Gly
                885                 890                 895

Val Thr Val Trp Glu Leu Met Thr Phe Gly Ala Glu Pro Tyr Ala Gly
            900                 905                 910

Leu Arg Leu Ala Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu
        915                 920                 925

Ala Gln Pro Gln Ile Cys Thr Ile Asp Val Tyr Met Val Met Val Lys
    930                 935                 940

Cys Trp Met Ile Asp Glu Asn Ile Arg Pro Thr Phe Lys Glu Leu Ala
945                 950                 955                 960

Asn Glu Phe Thr Arg Met Ala Arg Asp Pro Pro Arg Tyr Leu Val Ile
                965                 970                 975

Lys Arg Ala Ser Gly Pro Gly Ile Pro Pro Ala Ala Glu Pro Ser Ala
            980                 985                 990

Leu Ser Thr Lys Glu Leu Gln Asp  Ala Glu Leu Glu Pro  Asp Leu Asp
        995                 1000                1005

Leu Asp  Leu Asp Val Glu Val  Glu Glu Glu Gly Leu  Ala Thr Thr
    1010                1015                1020

Leu Gly  Ser Ala Leu Ser Leu  Pro Thr Gly Thr Leu  Thr Arg Pro
    1025                1030                1035

Arg Gly  Ser Gln Ser Leu Leu  Ser Pro Ser Ser Gly  Tyr Met Pro
    1040                1045                1050

Met Asn  Gln Ser Asn Leu Gly  Glu Ala Cys Leu Asp  Ser Ala Val
    1055                1060                1065

Leu Gly  Gly Arg Glu Gln Phe  Ser Arg Pro Ile Ser  Leu His Pro
    1070                1075                1080
```

Ile Pro Arg Gly Arg Gln Thr Ser Glu Ser Ser Glu Gly His Val
1085 1090 1095

Thr Gly Ser Glu Ala Glu Leu Gln Glu Arg Val Ser Met Cys Arg
1100 1105 1110

Ser Arg Ser Arg Ser Arg Ser Pro Arg Pro Arg Gly Asp Ser Ala
1115 1120 1125

Tyr His Ser Gln Arg His Ser Leu Leu Thr Pro Val Thr Pro Leu
1130 1135 1140

Ser Pro Pro Gly Leu Glu Glu Glu Asp Gly Asn Gly Tyr Val Met
1145 1150 1155

Pro Asp Thr His Leu Arg Gly Thr Ser Ser Ser Arg Glu Gly Thr
1160 1165 1170

Leu Ser Ser Val Gly Leu Ser Ser Val Leu Gly Thr Glu Glu Glu
1175 1180 1185

Asp Glu Asp Glu Glu Tyr Glu Tyr Met Asn Arg Lys Arg Arg Gly
1190 1195 1200

Ser Pro Ala Arg Pro Pro Arg Pro Gly Ser Leu Glu Glu Leu Gly
1205 1210 1215

Tyr Glu Tyr Met Asp Val Gly Ser Asp Leu Ser Ala Ser Leu Gly
1220 1225 1230

Ser Thr Gln Ser Cys Pro Leu His Pro Met Ala Ile Val Pro Ser
1235 1240 1245

Ala Gly Thr Thr Pro Asp Glu Asp Tyr Glu Tyr Met Asn Arg Arg
1250 1255 1260

Arg Gly Ala Gly Gly Ser Gly Gly Asp Tyr Ala Ala Met Gly Ala
1265 1270 1275

Cys Pro Ala Ala Glu Gln Gly Tyr Glu Glu Met Arg Ala Phe Gln
1280 1285 1290

Gly Pro Gly His Gln Ala Pro His Val Arg Tyr Ala Arg Leu Lys
1295 1300 1305

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Thr Leu  Arg Ser Leu Glu Ala  Thr Asp Ser Ala Phe  Asp Asn Pro
    1310                1315                1320

Asp Tyr  Trp His Ser Arg Leu  Phe Pro Lys Ala Asn  Ala Gln Arg
    1325                1330                1335

Ile
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<210> 18
<211> 5484
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<213> Homo sapiens

<220>
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<222> (34)..(3960)

<400> 18

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                                      Met Lys Pro Ala Thr Gly Leu
                                      1               5

tgg gtc tgg gtg agc ctt ctc gtg gcg gcg ggg acc gtc cag ccc agc      102
Trp Val Trp Val Ser Leu Leu Val Ala Ala Gly Thr Val Gln Pro Ser
        10                  15                  20

gat tct cag tca gtg tgt gca gga acg gag aat aaa ctg agc tct ctc      150
Asp Ser Gln Ser Val Cys Ala Gly Thr Glu Asn Lys Leu Ser Ser Leu
    25                  30                  35

tct gac ctg gaa cag cag tac cga gcc ttg cgc aag tac tat gaa aac      198
Ser Asp Leu Glu Gln Gln Tyr Arg Ala Leu Arg Lys Tyr Tyr Glu Asn
40                  45                  50                  55

tgt gag gtt gtc atg ggc aac ctg gag ata acc agc att gag cac aac      246
Cys Glu Val Val Met Gly Asn Leu Glu Ile Thr Ser Ile Glu His Asn
                60                  65                  70

cgg gac ctc tcc ttc ctg cgg tct gtt cga gaa gtc aca ggc tac gtg      294
Arg Asp Leu Ser Phe Leu Arg Ser Val Arg Glu Val Thr Gly Tyr Val
            75                  80                  85

tta gtg gct ctt aat cag ttt cgt tac ctg cct ctg gag aat tta cgc      342
Leu Val Ala Leu Asn Gln Phe Arg Tyr Leu Pro Leu Glu Asn Leu Arg
        90                  95                  100

att att cgt ggg aca aaa ctt tat gag gat cga tat gcc ttg gca ata      390
Ile Ile Arg Gly Thr Lys Leu Tyr Glu Asp Arg Tyr Ala Leu Ala Ile
    105                 110                 115

ttt tta aac tac aga aaa gat gga aac ttt gga ctt caa gaa ctt gga      438
Phe Leu Asn Tyr Arg Lys Asp Gly Asn Phe Gly Leu Gln Glu Leu Gly
120                 125                 130                 135
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tta aag aac ttg aca gaa atc cta aat ggt gga gtc tat gta gac cag      486
Leu Lys Asn Leu Thr Glu Ile Leu Asn Gly Gly Val Tyr Val Asp Gln
                140                 145                 150

aac aaa ttc ctt tgt tat gca gac acc att cat tgg caa gat att gtt      534
Asn Lys Phe Leu Cys Tyr Ala Asp Thr Ile His Trp Gln Asp Ile Val
            155                 160                 165

cgg aac cca tgg cct tcc aac ttg act ctt gtg tca aca aat ggt agt      582
Arg Asn Pro Trp Pro Ser Asn Leu Thr Leu Val Ser Thr Asn Gly Ser
        170                 175                 180

tca gga tgt gga cgt tgc cat aag tcc tgt act ggc cgt tgc tgg gga      630
Ser Gly Cys Gly Arg Cys His Lys Ser Cys Thr Gly Arg Cys Trp Gly
    185                 190                 195

ccc aca gaa aat cat tgc cag act ttg aca agg acg gtg tgt gca gaa      678
Pro Thr Glu Asn His Cys Gln Thr Leu Thr Arg Thr Val Cys Ala Glu
200                 205                 210                 215

caa tgt gac ggc aga tgc tac gga cct tac gtc agt gac tgc tgc cat      726
Gln Cys Asp Gly Arg Cys Tyr Gly Pro Tyr Val Ser Asp Cys Cys His
                220                 225                 230

cga gaa tgt gct gga ggc tgc tca gga cct aag gac aca gac tgc ttt      774
Arg Glu Cys Ala Gly Gly Cys Ser Gly Pro Lys Asp Thr Asp Cys Phe
            235                 240                 245

gcc tgc atg aat ttc aat gac agt gga gca tgt gtt act cag tgt ccc      822
Ala Cys Met Asn Phe Asn Asp Ser Gly Ala Cys Val Thr Gln Cys Pro
        250                 255                 260

caa acc ttt gtc tac aat cca acc acc ttt caa ctg gag cac aat ttc      870
Gln Thr Phe Val Tyr Asn Pro Thr Thr Phe Gln Leu Glu His Asn Phe
    265                 270                 275

aat gca aag tac aca tat gga gca ttc tgt gtc aag aaa tgt cca cat      918
Asn Ala Lys Tyr Thr Tyr Gly Ala Phe Cys Val Lys Lys Cys Pro His
280                 285                 290                 295

aac ttt gtg gta gat tcc agt tct tgt gtg cgt gcc tgc cct agt tcc      966
Asn Phe Val Val Asp Ser Ser Ser Cys Val Arg Ala Cys Pro Ser Ser
                300                 305                 310

aag atg gaa gta gaa gaa aat ggg att aaa atg tgt aaa cct tgc act     1014
Lys Met Glu Val Glu Glu Asn Gly Ile Lys Met Cys Lys Pro Cys Thr
            315                 320                 325

gac att tgc cca aaa gct tgt gat ggc att ggc aca gga tca ttg atg     1062
Asp Ile Cys Pro Lys Ala Cys Asp Gly Ile Gly Thr Gly Ser Leu Met
        330                 335                 340

tca gct cag act gtg gat tcc agt aac att gac aaa ttc ata aac tgt     1110
Ser Ala Gln Thr Val Asp Ser Ser Asn Ile Asp Lys Phe Ile Asn Cys
    345                 350                 355

acc aag atc aat ggg aat ttg atc ttt cta gtc act ggt att cat ggg     1158
Thr Lys Ile Asn Gly Asn Leu Ile Phe Leu Val Thr Gly Ile His Gly
360                 365                 370                 375
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gac cct tac aat gca att gaa gcc ata gac cca gag aaa ctg aac gtc      1206
Asp Pro Tyr Asn Ala Ile Glu Ala Ile Asp Pro Glu Lys Leu Asn Val
                380                 385                 390

ttt cgg aca gtc aga gag ata aca ggt ttc ctg aac ata cag tca tgg      1254
Phe Arg Thr Val Arg Glu Ile Thr Gly Phe Leu Asn Ile Gln Ser Trp
            395                 400                 405

cca cca aac atg act gac ttc agt gtt ttt tct aac ctg gtg acc att      1302
Pro Pro Asn Met Thr Asp Phe Ser Val Phe Ser Asn Leu Val Thr Ile
        410                 415                 420

ggt gga aga gta ctc tat agt ggc ctg tcc ttg ctt atc ctc aag caa      1350
Gly Gly Arg Val Leu Tyr Ser Gly Leu Ser Leu Leu Ile Leu Lys Gln
    425                 430                 435

cag ggc atc acc tct cta cag ttc cag tcc ctg aag gaa atc agc gca      1398
Gln Gly Ile Thr Ser Leu Gln Phe Gln Ser Leu Lys Glu Ile Ser Ala
440                 445                 450                 455

gga aac atc tat att act gac aac agc aac ctg tgt tat tat cat acc      1446
Gly Asn Ile Tyr Ile Thr Asp Asn Ser Asn Leu Cys Tyr Tyr His Thr
                460                 465                 470

att aac tgg aca aca ctc ttc agc aca atc aac cag aga ata gta atc      1494
Ile Asn Trp Thr Thr Leu Phe Ser Thr Ile Asn Gln Arg Ile Val Ile
            475                 480                 485

cgg gac aac aga aaa gct gaa aat tgt act gct gaa gga atg gtg tgc      1542
Arg Asp Asn Arg Lys Ala Glu Asn Cys Thr Ala Glu Gly Met Val Cys
        490                 495                 500

aac cat ctg tgt tcc agt gat ggc tgt tgg gga cct ggg cca gac caa      1590
Asn His Leu Cys Ser Ser Asp Gly Cys Trp Gly Pro Gly Pro Asp Gln
    505                 510                 515

tgt ctg tcg tgt cgc cgc ttc agt aga gga agg atc tgc ata gag tct      1638
Cys Leu Ser Cys Arg Arg Phe Ser Arg Gly Arg Ile Cys Ile Glu Ser
520                 525                 530                 535

tgt aac ctc tat gat ggt gaa ttt cgg gag ttt gag aat ggc tcc atc      1686
Cys Asn Leu Tyr Asp Gly Glu Phe Arg Glu Phe Glu Asn Gly Ser Ile
                540                 545                 550

tgt gtg gag tgt gac ccc cag tgt gag aag atg gaa gat ggc ctc ctc      1734
Cys Val Glu Cys Asp Pro Gln Cys Glu Lys Met Glu Asp Gly Leu Leu
            555                 560                 565

aca tgc cat gga ccg ggt cct gac aac tgt aca aag tgc tct cat ttt      1782
Thr Cys His Gly Pro Gly Pro Asp Asn Cys Thr Lys Cys Ser His Phe
        570                 575                 580

aaa gat ggc cca aac tgt gtg gaa aaa tgt cca gat ggc tta cag ggg      1830
Lys Asp Gly Pro Asn Cys Val Glu Lys Cys Pro Asp Gly Leu Gln Gly
    585                 590                 595

gca aac agt ttc att ttc aag tat gct gat cca gat cgg gag tgc cac      1878
Ala Asn Ser Phe Ile Phe Lys Tyr Ala Asp Pro Asp Arg Glu Cys His
600                 605                 610                 615
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cca tgc cat cca aac tgc acc caa ggg tgt aac ggt ccc act agt cat     1926
Pro Cys His Pro Asn Cys Thr Gln Gly Cys Asn Gly Pro Thr Ser His
                620                 625                 630

gac tgc att tac tac cca tgg acg ggc cat tcc act tta cca caa cat     1974
Asp Cys Ile Tyr Tyr Pro Trp Thr Gly His Ser Thr Leu Pro Gln His
            635                 640                 645

gct aga act ccc ctg att gca gct gga gta att ggt ggg ctc ttc att     2022
Ala Arg Thr Pro Leu Ile Ala Ala Gly Val Ile Gly Gly Leu Phe Ile
        650                 655                 660

ctg gtc att gtg ggt ctg aca ttt gct gtt tat gtt aga agg aag agc     2070
Leu Val Ile Val Gly Leu Thr Phe Ala Val Tyr Val Arg Arg Lys Ser
    665                 670                 675

atc aaa aag aaa aga gcc ttg aga aga ttc ttg gaa aca gag ttg gtg     2118
Ile Lys Lys Lys Arg Ala Leu Arg Arg Phe Leu Glu Thr Glu Leu Val
680                 685                 690                 695

gaa cca tta act ccc agt ggc aca gca ccc aat caa gct caa ctt cgt     2166
Glu Pro Leu Thr Pro Ser Gly Thr Ala Pro Asn Gln Ala Gln Leu Arg
                700                 705                 710

att ttg aaa gaa act gag ctg aag agg gta aaa gtc ctt ggc tca ggt     2214
Ile Leu Lys Glu Thr Glu Leu Lys Arg Val Lys Val Leu Gly Ser Gly
            715                 720                 725

gct ttt gga acg gtt tat aaa ggt att tgg gta cct gaa gga gaa act     2262
Ala Phe Gly Thr Val Tyr Lys Gly Ile Trp Val Pro Glu Gly Glu Thr
        730                 735                 740

gtg aag att cct gtg gct att aag att ctt aat gag aca act ggt ccc     2310
Val Lys Ile Pro Val Ala Ile Lys Ile Leu Asn Glu Thr Thr Gly Pro
    745                 750                 755

aag gca aat gtg gag ttc atg gat gaa gct ctg atc atg gca agt atg     2358
Lys Ala Asn Val Glu Phe Met Asp Glu Ala Leu Ile Met Ala Ser Met
760                 765                 770                 775

gat cat cca cac cta gtc cgg ttg ctg ggt gtg tgt ctg agc cca acc     2406
Asp His Pro His Leu Val Arg Leu Leu Gly Val Cys Leu Ser Pro Thr
                780                 785                 790

atc cag ctg gtt act caa ctt atg ccc cat ggc tgc ctg ttg gag tat     2454
Ile Gln Leu Val Thr Gln Leu Met Pro His Gly Cys Leu Leu Glu Tyr
            795                 800                 805

gtc cac gag cac aag gat aac att gga tca caa ctg ctg ctt aac tgg     2502
Val His Glu His Lys Asp Asn Ile Gly Ser Gln Leu Leu Leu Asn Trp
        810                 815                 820

tgt gtc cag ata gct aag gga atg atg tac ctg gaa gaa aga cga ctc     2550
Cys Val Gln Ile Ala Lys Gly Met Met Tyr Leu Glu Glu Arg Arg Leu
    825                 830                 835

gtt cat cgg gat ttg gca gcc cgt aat gtc tta gtg aaa tct cca aac     2598
Val His Arg Asp Leu Ala Ala Arg Asn Val Leu Val Lys Ser Pro Asn
840                 845                 850                 855
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cat gtg aaa atc aca gat ttt ggg cta gcc aga ctc ttg gaa gga gat     2646
His Val Lys Ile Thr Asp Phe Gly Leu Ala Arg Leu Leu Glu Gly Asp
                860                 865                 870

gaa aaa gag tac aat gct gat gga gga aag atg cca att aaa tgg atg     2694
Glu Lys Glu Tyr Asn Ala Asp Gly Gly Lys Met Pro Ile Lys Trp Met
            875                 880                 885

gct ctg gag tgt ata cat tac agg aaa ttc acc cat cag agt gac gtt     2742
Ala Leu Glu Cys Ile His Tyr Arg Lys Phe Thr His Gln Ser Asp Val
        890                 895                 900

tgg agc tat gga gtt act ata tgg gaa ctg atg acc ttt gga gga aaa     2790
Trp Ser Tyr Gly Val Thr Ile Trp Glu Leu Met Thr Phe Gly Gly Lys
    905                 910                 915

ccc tat gat gga att cca acg cga gaa atc cct gat tta tta gag aaa     2838
Pro Tyr Asp Gly Ile Pro Thr Arg Glu Ile Pro Asp Leu Leu Glu Lys
920                 925                 930                 935

gga gaa cgt ttg cct cag cct ccc atc tgc act att gac gtt tac atg     2886
Gly Glu Arg Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met
                940                 945                 950

gtc atg gtc aaa tgt tgg atg att gat gct gac agt aga cct aaa ttt     2934
Val Met Val Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe
            955                 960                 965

aag gaa ctg gct gct gag ttt tca agg atg gct cga gac cct caa aga     2982
Lys Glu Leu Ala Ala Glu Phe Ser Arg Met Ala Arg Asp Pro Gln Arg
        970                 975                 980

tac cta gtt att cag ggt gat gat cgt atg aag ctt ccc agt cca aat     3030
Tyr Leu Val Ile Gln Gly Asp Asp Arg Met Lys Leu Pro Ser Pro Asn
    985                 990                 995

gac  agc aag ttc ttt cag  aat ctc ttg gat gaa  gag gat ttg gaa      3075
Asp  Ser Lys Phe Phe Gln  Asn Leu Leu Asp Glu  Glu Asp Leu Glu
1000                1005                1010

gat  atg atg gat gct gag  gag tac ttg gtc cct  cag gct ttc aac      3120
Asp  Met Met Asp Ala Glu  Glu Tyr Leu Val Pro  Gln Ala Phe Asn
1015                1020                1025

atc  cca cct ccc atc tat  act tcc aga gca aga  att gac tcg aat      3165
Ile  Pro Pro Pro Ile Tyr  Thr Ser Arg Ala Arg  Ile Asp Ser Asn
1030                1035                1040

agg  agt gaa att gga cac  agc cct cct cct gcc  tac acc ccc atg      3210
Arg  Ser Glu Ile Gly His  Ser Pro Pro Pro Ala  Tyr Thr Pro Met
1045                1050                1055

tca  gga aac cag ttt gta  tac cga gat gga ggt  ttt gct gct gaa      3255
Ser  Gly Asn Gln Phe Val  Tyr Arg Asp Gly Gly  Phe Ala Ala Glu
1060                1065                1070

caa  gga gtg tct gtg ccc  tac aga gcc cca act  agc aca att cca      3300
Gln  Gly Val Ser Val Pro  Tyr Arg Ala Pro Thr  Ser Thr Ile Pro
1075                1080                1085
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gaa  gct cct gtg gca cag  ggt gct act gct gag  att ttt gat gac      3345
Glu  Ala Pro Val Ala Gln  Gly Ala Thr Ala Glu  Ile Phe Asp Asp
1090                1095                1100

tcc  tgc tgt aat ggc acc  cta cgc aag cca gtg  gca ccc cat gtc      3390
Ser  Cys Cys Asn Gly Thr  Leu Arg Lys Pro Val  Ala Pro His Val
1105                1110                1115

caa  gag gac agt agc acc  cag agg tac agt gct  gac ccc acc gtg      3435
Gln  Glu Asp Ser Ser Thr  Gln Arg Tyr Ser Ala  Asp Pro Thr Val
1120                1125                1130

ttt  gcc cca gaa cgg agc  cca cga gga gag ctg  gat gag gaa ggt      3480
Phe  Ala Pro Glu Arg Ser  Pro Arg Gly Glu Leu  Asp Glu Glu Gly
1135                1140                1145

tac  atg act cct atg cga  gac aaa ccc aaa caa  gaa tac ctg aat      3525
Tyr  Met Thr Pro Met Arg  Asp Lys Pro Lys Gln  Glu Tyr Leu Asn
1150                1155                1160

cca  gtg gag gag aac cct  ttt gtt tct cgg aga  aaa aat gga gac      3570
Pro  Val Glu Glu Asn Pro  Phe Val Ser Arg Arg  Lys Asn Gly Asp
1165                1170                1175

ctt  caa gca ttg gat aat  ccc gaa tat cac aat  gca tcc aat ggt      3615
Leu  Gln Ala Leu Asp Asn  Pro Glu Tyr His Asn  Ala Ser Asn Gly
1180                1185                1190

cca  ccc aag gcc gag gat  gag tat gtg aat gag  cca ctg tac ctc      3660
Pro  Pro Lys Ala Glu Asp  Glu Tyr Val Asn Glu  Pro Leu Tyr Leu
1195                1200                1205

aac  acc ttt gcc aac acc  ttg gga aaa gct gag  tac ctg aag aac      3705
Asn  Thr Phe Ala Asn Thr  Leu Gly Lys Ala Glu  Tyr Leu Lys Asn
1210                1215                1220

aac  ata ctg tca atg cca  gag aag gcc aag aaa  gcg ttt gac aac      3750
Asn  Ile Leu Ser Met Pro  Glu Lys Ala Lys Lys  Ala Phe Asp Asn
1225                1230                1235

cct  gac tac tgg aac cac  agc ctg cca cct cgg  agc acc ctt cag      3795
Pro  Asp Tyr Trp Asn His  Ser Leu Pro Pro Arg  Ser Thr Leu Gln
1240                1245                1250

cac  cca gac tac ctg cag  gag tac agc aca aaa  tat ttt tat aaa      3840
His  Pro Asp Tyr Leu Gln  Glu Tyr Ser Thr Lys  Tyr Phe Tyr Lys
1255                1260                1265

cag  aat ggg cgg atc cgg  cct att gtg gca gag  aat cct gaa tac      3885
Gln  Asn Gly Arg Ile Arg  Pro Ile Val Ala Glu  Asn Pro Glu Tyr
1270                1275                1280

ctc  tct gag ttc tcc ctg  aag cca ggc act gtg  ctg ccg cct cca      3930
Leu  Ser Glu Phe Ser Leu  Lys Pro Gly Thr Val  Leu Pro Pro Pro
1285                1290                1295

cct  tac aga cac cgg aat  act gtg gtg taa gctcagttgt ggttttttag     3980
Pro  Tyr Arg His Arg Asn  Thr Val Val
1300                1305
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gtggagagac acacctgctc caatttcccc acccccctct ctttctctgg tggtcttcct 4040

tctaccccaa ggccagtagt tttgacactt cccagtggaa gatacagaga tgcaatgata 4100

gttatgtgct tacctaactt gaacattaga gggaaagact gaaagagaaa gataggagga 4160

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ggttgaaaca cccatgctat ctgttcctat ctgcaggaac tgatgtgtgc atatttagca 4400

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aagaatggcc aactcaactt tcataattta aaaatctcca ttaaagttat aactagtaat 4580

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cattatcttc atatgtcacc tttgctacgc aaggaaattt gttcagttcg tatacttcgt 5300

aagaaggaat gcgagtaagg attggcttga attccatgga atttctagta tgagactatt 5360

tatatgaagt agaaggtaac tctttgcaca taaattggta taataaaaag aaaaacacaa 5420

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1               5                  10                  15

Ala Gly Thr Val Gln Pro Ser Asp Ser Gln Ser Val Cys Ala Gly Thr
            20                  25                  30

Glu Asn Lys Leu Ser Ser Leu Ser Asp Leu Glu Gln Gln Tyr Arg Ala
        35                  40                  45

Leu Arg Lys Tyr Tyr Glu Asn Cys Glu Val Val Met Gly Asn Leu Glu
    50                  55                  60

Ile Thr Ser Ile Glu His Asn Arg Asp Leu Ser Phe Leu Arg Ser Val
65                  70                  75                  80

Arg Glu Val Thr Gly Tyr Val Leu Val Ala Leu Asn Gln Phe Arg Tyr
                85                  90                  95

Leu Pro Leu Glu Asn Leu Arg Ile Ile Arg Gly Thr Lys Leu Tyr Glu
            100                 105                 110

Asp Arg Tyr Ala Leu Ala Ile Phe Leu Asn Tyr Arg Lys Asp Gly Asn
        115                 120                 125

Phe Gly Leu Gln Glu Leu Gly Leu Lys Asn Leu Thr Glu Ile Leu Asn
    130                 135                 140

Gly Gly Val Tyr Val Asp Gln Asn Lys Phe Leu Cys Tyr Ala Asp Thr
145                 150                 155                 160

Ile His Trp Gln Asp Ile Val Arg Asn Pro Trp Pro Ser Asn Leu Thr
                165                 170                 175

Leu Val Ser Thr Asn Gly Ser Ser Gly Cys Gly Arg Cys His Lys Ser
            180                 185                 190

Cys Thr Gly Arg Cys Trp Gly Pro Thr Glu Asn His Cys Gln Thr Leu
        195                 200                 205

Thr Arg Thr Val Cys Ala Glu Gln Cys Asp Gly Arg Cys Tyr Gly Pro
    210                 215                 220
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Tyr Val Ser Asp Cys Cys His Arg Glu Cys Ala Gly Gly Cys Ser Gly
225                 230                 235                 240

Pro Lys Asp Thr Asp Cys Phe Ala Cys Met Asn Phe Asn Asp Ser Gly
                245                 250                 255

Ala Cys Val Thr Gln Cys Pro Gln Thr Phe Val Tyr Asn Pro Thr Thr
            260                 265                 270

Phe Gln Leu Glu His Asn Phe Asn Ala Lys Tyr Thr Tyr Gly Ala Phe
        275                 280                 285

Cys Val Lys Lys Cys Pro His Asn Phe Val Val Asp Ser Ser Ser Cys
    290                 295                 300

Val Arg Ala Cys Pro Ser Ser Lys Met Glu Val Glu Glu Asn Gly Ile
305                 310                 315                 320

Lys Met Cys Lys Pro Cys Thr Asp Ile Cys Pro Lys Ala Cys Asp Gly
                325                 330                 335

Ile Gly Thr Gly Ser Leu Met Ser Ala Gln Thr Val Asp Ser Ser Asn
            340                 345                 350

Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile Asn Gly Asn Leu Ile Phe
        355                 360                 365

Leu Val Thr Gly Ile His Gly Asp Pro Tyr Asn Ala Ile Glu Ala Ile
    370                 375                 380

Asp Pro Glu Lys Leu Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly
385                 390                 395                 400

Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn Met Thr Asp Phe Ser Val
                405                 410                 415

Phe Ser Asn Leu Val Thr Ile Gly Gly Arg Val Leu Tyr Ser Gly Leu
            420                 425                 430

Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile Thr Ser Leu Gln Phe Gln
        435                 440                 445

Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile Tyr Ile Thr Asp Asn Ser
    450                 455                 460
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Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp Thr Thr Leu Phe Ser Thr
465 470 475 480

Ile Asn Gln Arg Ile Val Ile Arg Asp Asn Arg Lys Ala Glu Asn Cys
485 490 495

Thr Ala Glu Gly Met Val Cys Asn His Leu Cys Ser Ser Asp Gly Cys
500 505 510

Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser Cys Arg Arg Phe Ser Arg
515 520 525

Gly Arg Ile Cys Ile Glu Ser Cys Asn Leu Tyr Asp Gly Glu Phe Arg
530 535 540

Glu Phe Glu Asn Gly Ser Ile Cys Val Glu Cys Asp Pro Gln Cys Glu
545 550 555 560

Lys Met Glu Asp Gly Leu Leu Thr Cys His Gly Pro Gly Pro Asp Asn
565 570 575

Cys Thr Lys Cys Ser His Phe Lys Asp Gly Pro Asn Cys Val Glu Lys
580 585 590

Cys Pro Asp Gly Leu Gln Gly Ala Asn Ser Phe Ile Phe Lys Tyr Ala
595 600 605

Asp Pro Asp Arg Glu Cys His Pro Cys His Pro Asn Cys Thr Gln Gly
610 615 620

Cys Asn Gly Pro Thr Ser His Asp Cys Ile Tyr Tyr Pro Trp Thr Gly
625 630 635 640

His Ser Thr Leu Pro Gln His Ala Arg Thr Pro Leu Ile Ala Ala Gly
645 650 655

Val Ile Gly Gly Leu Phe Ile Leu Val Ile Val Gly Leu Thr Phe Ala
660 665 670

Val Tyr Val Arg Arg Lys Ser Ile Lys Lys Lys Arg Ala Leu Arg Arg
675 680 685

Phe Leu Glu Thr Glu Leu Val Glu Pro Leu Thr Pro Ser Gly Thr Ala
690 695 700

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Pro Asn Gln Ala Gln Leu Arg Ile Leu Lys Glu Thr Glu Leu Lys Arg
705                 710                 715                 720

Val Lys Val Leu Gly Ser Gly Ala Phe Gly Thr Val Tyr Lys Gly Ile
                725                 730                 735

Trp Val Pro Glu Gly Glu Thr Val Lys Ile Pro Val Ala Ile Lys Ile
            740                 745                 750

Leu Asn Glu Thr Thr Gly Pro Lys Ala Asn Val Glu Phe Met Asp Glu
        755                 760                 765

Ala Leu Ile Met Ala Ser Met Asp His Pro His Leu Val Arg Leu Leu
    770                 775                 780

Gly Val Cys Leu Ser Pro Thr Ile Gln Leu Val Thr Gln Leu Met Pro
785                 790                 795                 800

His Gly Cys Leu Leu Glu Tyr Val His Glu His Lys Asp Asn Ile Gly
                805                 810                 815

Ser Gln Leu Leu Leu Asn Trp Cys Val Gln Ile Ala Lys Gly Met Met
            820                 825                 830

Tyr Leu Glu Glu Arg Arg Leu Val His Arg Asp Leu Ala Ala Arg Asn
        835                 840                 845

Val Leu Val Lys Ser Pro Asn His Val Lys Ile Thr Asp Phe Gly Leu
    850                 855                 860

Ala Arg Leu Leu Glu Gly Asp Glu Lys Glu Tyr Asn Ala Asp Gly Gly
865                 870                 875                 880

Lys Met Pro Ile Lys Trp Met Ala Leu Glu Cys Ile His Tyr Arg Lys
                885                 890                 895

Phe Thr His Gln Ser Asp Val Trp Ser Tyr Gly Val Thr Ile Trp Glu
            900                 905                 910

Leu Met Thr Phe Gly Gly Lys Pro Tyr Asp Gly Ile Pro Thr Arg Glu
        915                 920                 925

Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg Leu Pro Gln Pro Pro Ile
    930                 935                 940
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Cys Thr Ile Asp Val Tyr Met Val Met Val Lys Cys Trp Met Ile Asp
945                 950                 955                 960

Ala Asp Ser Arg Pro Lys Phe Lys Glu Leu Ala Ala Glu Phe Ser Arg
                965                 970                 975

Met Ala Arg Asp Pro Gln Arg Tyr Leu Val Ile Gln Gly Asp Asp Arg
            980                 985                 990

Met Lys Leu Pro Ser Pro Asn Asp  Ser Lys Phe Phe Gln  Asn Leu Leu
        995                 1000                1005

Asp Glu  Glu Asp Leu Glu Asp  Met Met Asp Ala Glu  Glu Tyr Leu
    1010                1015                1020

Val Pro  Gln Ala Phe Asn Ile  Pro Pro Pro Ile Tyr  Thr Ser Arg
    1025                1030                1035

Ala Arg  Ile Asp Ser Asn Arg  Ser Glu Ile Gly His  Ser Pro Pro
    1040                1045                1050

Pro Ala  Tyr Thr Pro Met Ser  Gly Asn Gln Phe Val  Tyr Arg Asp
    1055                1060                1065

Gly Gly  Phe Ala Ala Glu Gln  Gly Val Ser Val Pro  Tyr Arg Ala
    1070                1075                1080

Pro Thr  Ser Thr Ile Pro Glu  Ala Pro Val Ala Gln  Gly Ala Thr
    1085                1090                1095

Ala Glu  Ile Phe Asp Asp Ser  Cys Cys Asn Gly Thr  Leu Arg Lys
    1100                1105                1110

Pro Val  Ala Pro His Val Gln  Glu Asp Ser Ser Thr  Gln Arg Tyr
    1115                1120                1125

Ser Ala  Asp Pro Thr Val Phe  Ala Pro Glu Arg Ser  Pro Arg Gly
    1130                1135                1140

Glu Leu  Asp Glu Glu Gly Tyr  Met Thr Pro Met Arg  Asp Lys Pro
    1145                1150                1155

Lys Gln  Glu Tyr Leu Asn Pro  Val Glu Glu Asn Pro  Phe Val Ser
    1160                1165                1170
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Arg Arg  Lys Asn Gly Asp Leu  Gln Ala Leu Asp Asn  Pro Glu Tyr
    1175                1180                1185

His Asn  Ala Ser Asn Gly Pro  Pro Lys Ala Glu Asp  Glu Tyr Val
    1190                1195                1200

Asn Glu  Pro Leu Tyr Leu Asn  Thr Phe Ala Asn Thr  Leu Gly Lys
    1205                1210                1215

Ala Glu  Tyr Leu Lys Asn Asn  Ile Leu Ser Met Pro  Glu Lys Ala
    1220                1225                1230

Lys Lys  Ala Phe Asp Asn Pro  Asp Tyr Trp Asn His  Ser Leu Pro
    1235                1240                1245

Pro Arg  Ser Thr Leu Gln His  Pro Asp Tyr Leu Gln  Glu Tyr Ser
    1250                1255                1260

Thr Lys  Tyr Phe Tyr Lys Gln  Asn Gly Arg Ile Arg  Pro Ile Val
    1265                1270                1275

Ala Glu  Asn Pro Glu Tyr Leu  Ser Glu Phe Ser Leu  Lys Pro Gly
    1280                1285                1290

Thr Val  Leu Pro Pro Pro Pro  Tyr Arg His Arg Asn  Thr Val Val
    1295                1300                1305
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Met Ala Ile Pro Ser Arg Arg Lys Asp Tyr Pro Lys Leu Ser Glu Ile
1               5                  10                  15

aca gtg tgc gca gga aca gag aac aaa ctg agc tct ctc tct gac ctg       96
Thr Val Cys Ala Gly Thr Glu Asn Lys Leu Ser Ser Leu Ser Asp Leu
            20                  25                  30

gaa cag cag tac cga gcc ttg cgc aaa tac tat gaa aac tgc gag gta      144
Glu Gln Gln Tyr Arg Ala Leu Arg Lys Tyr Tyr Glu Asn Cys Glu Val
        35                  40                  45
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gtc atg ggc aac ctg gag atc acc agc atc gag cac aac cgg gac ctc      192
Val Met Gly Asn Leu Glu Ile Thr Ser Ile Glu His Asn Arg Asp Leu
    50                  55                  60

tcc ttc ctg cgg tct atc cga gaa gtc aca ggc tac gtc ctg gtg gcc      240
Ser Phe Leu Arg Ser Ile Arg Glu Val Thr Gly Tyr Val Leu Val Ala
65                  70                  75                  80

ctc aac cag ttt cgt tac ttg cct ctg gag aat tta cgc att att cgt      288
Leu Asn Gln Phe Arg Tyr Leu Pro Leu Glu Asn Leu Arg Ile Ile Arg
                85                  90                  95

ggg aca aaa cta tat gaa gat cgc tat gcc tta gcg ata ttc tta aac      336
Gly Thr Lys Leu Tyr Glu Asp Arg Tyr Ala Leu Ala Ile Phe Leu Asn
            100                 105                 110

tac agg aaa gat ggc aac ttt gga ctc caa gaa ctt gga tta aag aac      384
Tyr Arg Lys Asp Gly Asn Phe Gly Leu Gln Glu Leu Gly Leu Lys Asn
        115                 120                 125

ctg acc gaa ata cta aat ggt gga gtc tat gta gac cag aac aaa ttc      432
Leu Thr Glu Ile Leu Asn Gly Gly Val Tyr Val Asp Gln Asn Lys Phe
    130                 135                 140

cta tgt tat gct gac act ata cac tgg caa gat att gtt cgg aat cca      480
Leu Cys Tyr Ala Asp Thr Ile His Trp Gln Asp Ile Val Arg Asn Pro
145                 150                 155                 160

tgg cct tcc aac atg act ctg gtg tca aca aat gga agt tct gga tgt      528
Trp Pro Ser Asn Met Thr Leu Val Ser Thr Asn Gly Ser Ser Gly Cys
                165                 170                 175

gga aga tgc cat aag tct tgc act ggc cga tgc tgg gga ccc aca gaa      576
Gly Arg Cys His Lys Ser Cys Thr Gly Arg Cys Trp Gly Pro Thr Glu
            180                 185                 190

aat cac tgc cag acc ttg acc aga act gtg tgt gct gaa caa tgt gat      624
Asn His Cys Gln Thr Leu Thr Arg Thr Val Cys Ala Glu Gln Cys Asp
        195                 200                 205

ggc agg tgc tat gga ccc tac gtt agt gac tgc tgc cat cga gaa tgt      672
Gly Arg Cys Tyr Gly Pro Tyr Val Ser Asp Cys Cys His Arg Glu Cys
    210                 215                 220

gct gga ggc tgc tca gga cca aag gac act gac tgc ttt gcc tgc atg      720
Ala Gly Gly Cys Ser Gly Pro Lys Asp Thr Asp Cys Phe Ala Cys Met
225                 230                 235                 240

aac ttc aat gac agt gga gcc tgc gtt act caa tgt ccc caa aca ttt      768
Asn Phe Asn Asp Ser Gly Ala Cys Val Thr Gln Cys Pro Gln Thr Phe
                245                 250                 255

gtc tac aat cca acc acc ttt caa ctg gaa cac aac ttc aat gca aag      816
Val Tyr Asn Pro Thr Thr Phe Gln Leu Glu His Asn Phe Asn Ala Lys
            260                 265                 270

tac acg tat gga gca ttc tgt gtt aag aaa tgt cca cat aac ttc gtg      864
Tyr Thr Tyr Gly Ala Phe Cys Val Lys Lys Cys Pro His Asn Phe Val
        275                 280                 285
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gta gat tcc agt tct tgt gta cga gcc tgc cct agt tct aag atg gaa      912
Val Asp Ser Ser Ser Cys Val Arg Ala Cys Pro Ser Ser Lys Met Glu
    290                 295                 300

gta gaa gaa aat ggg att aaa atg tgt aag cct tgc acc gat att tgc      960
Val Glu Glu Asn Gly Ile Lys Met Cys Lys Pro Cys Thr Asp Ile Cys
305                 310                 315                 320

ccc aaa gca tgt gat gga atc ggc acg gga tca ctg atg tct gct cag     1008
Pro Lys Ala Cys Asp Gly Ile Gly Thr Gly Ser Leu Met Ser Ala Gln
                325                 330                 335

act gtg gat tca agt aac att gac aaa ttc ata aac tgc aca aag atc     1056
Thr Val Asp Ser Ser Asn Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile
            340                 345                 350

aat ggc aat ctc atc ttt ctt gtc act ggc att cat gga gac cct tac     1104
Asn Gly Asn Leu Ile Phe Leu Val Thr Gly Ile His Gly Asp Pro Tyr
        355                 360                 365

aat gct att gac gcc ata gat cca gag aaa ctg aat gtc ttt cgg act     1152
Asn Ala Ile Asp Ala Ile Asp Pro Glu Lys Leu Asn Val Phe Arg Thr
    370                 375                 380

gtc aga gaa ata aca ggt ttc ctg aac ata cag tct tgg ccc cca aat     1200
Val Arg Glu Ile Thr Gly Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn
385                 390                 395                 400

atg aca gat ttc agt gtt ttc tcc aac ctc gtc aca att gga gga aga     1248
Met Thr Asp Phe Ser Val Phe Ser Asn Leu Val Thr Ile Gly Gly Arg
                405                 410                 415

gtc ctc tac agt ggt ctc tca ttg ctg atc ctc aaa caa caa ggt atc     1296
Val Leu Tyr Ser Gly Leu Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile
            420                 425                 430

act tcc cta cag ttc cag tct ctg aag gaa atc agt gcg ggc aat atc     1344
Thr Ser Leu Gln Phe Gln Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile
        435                 440                 445

tac atc act gac aac agc aac ctg tgt tat tac cat acc att aac tgg     1392
Tyr Ile Thr Asp Asn Ser Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp
    450                 455                 460

aca aca ctc ttc agc acc att aac cag aga ata gtg atc cga gat aac     1440
Thr Thr Leu Phe Ser Thr Ile Asn Gln Arg Ile Val Ile Arg Asp Asn
465                 470                 475                 480

aga aga gct gag aat tgt act gct gaa ggc atg gta tgc aac cac ctg     1488
Arg Arg Ala Glu Asn Cys Thr Ala Glu Gly Met Val Cys Asn His Leu
                485                 490                 495

tgt tca aat gat ggt tgt tgg gga cct ggg ccg gac cag tgc ctg tca     1536
Cys Ser Asn Asp Gly Cys Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser
            500                 505                 510

tgt cgg cgc ttc agc agg gga aag atc tgc ata gag tct tgc aac ctt     1584
Cys Arg Arg Phe Ser Arg Gly Lys Ile Cys Ile Glu Ser Cys Asn Leu
        515                 520                 525
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tat gat ggg gaa ttt cga gag ttt gaa aac ggc tcc atc tgt gtt gag     1632
Tyr Asp Gly Glu Phe Arg Glu Phe Glu Asn Gly Ser Ile Cys Val Glu
    530                 535                 540

tgt gac tcc cag tgt gag aaa atg gaa gat gga ctc ctc aca tgc cat     1680
Cys Asp Ser Gln Cys Glu Lys Met Glu Asp Gly Leu Leu Thr Cys His
545                 550                 555                 560

gga ccg gga cct gac aac tgc aca aag tgc tct cat ttt aag gat ggt     1728
Gly Pro Gly Pro Asp Asn Cys Thr Lys Cys Ser His Phe Lys Asp Gly
                565                 570                 575

cca aac tgt gtg gag aaa tgt cca gat ggc cta cag gga gca aac agt     1776
Pro Asn Cys Val Glu Lys Cys Pro Asp Gly Leu Gln Gly Ala Asn Ser
            580                 585                 590

ttc att ttt aag tat gca gat cag gat cgg gag tgc cac cct tgc cat     1824
Phe Ile Phe Lys Tyr Ala Asp Gln Asp Arg Glu Cys His Pro Cys His
        595                 600                 605

cca aac tgc acc cag ggg tgt aac ggt ccc act agt cat gac tgc att     1872
Pro Asn Cys Thr Gln Gly Cys Asn Gly Pro Thr Ser His Asp Cys Ile
    610                 615                 620

tac tac cca tgg acg ggc cat tcc act tta cca caa cac gct aga act     1920
Tyr Tyr Pro Trp Thr Gly His Ser Thr Leu Pro Gln His Ala Arg Thr
625                 630                 635                 640

cca ctg att gca gcc gga gtc att gga ggc ctc ttc atc ctg gtg atc     1968
Pro Leu Ile Ala Ala Gly Val Ile Gly Gly Leu Phe Ile Leu Val Ile
                645                 650                 655

atg gct ttg aca ttt gct gtc tat gtc aga aga aag agc atc aaa aag     2016
Met Ala Leu Thr Phe Ala Val Tyr Val Arg Arg Lys Ser Ile Lys Lys
            660                 665                 670

aaa cgt gct ttg agg aga ttc ctg gag aca gag ctg gta gag ccc tta     2064
Lys Arg Ala Leu Arg Arg Phe Leu Glu Thr Glu Leu Val Glu Pro Leu
        675                 680                 685

act ccc agt ggc acg gca ccc aat caa gct caa ctt cgc att ttg aag     2112
Thr Pro Ser Gly Thr Ala Pro Asn Gln Ala Gln Leu Arg Ile Leu Lys
    690                 695                 700

gaa acc gaa cta aag agg gta aag gtc ctt ggc tcg gga gct ttt gga     2160
Glu Thr Glu Leu Lys Arg Val Lys Val Leu Gly Ser Gly Ala Phe Gly
705                 710                 715                 720

acc gtt tat aaa ggt att tgg gtg cct gaa ggt gaa aca gtg aaa atc     2208
Thr Val Tyr Lys Gly Ile Trp Val Pro Glu Gly Glu Thr Val Lys Ile
                725                 730                 735

cct gtg gct ata aag atc ctc aat gaa aca act ggc ccc aaa gcc aac     2256
Pro Val Ala Ile Lys Ile Leu Asn Glu Thr Thr Gly Pro Lys Ala Asn
            740                 745                 750

gtg gag ttc atg gat gag gct ctg atc atg gca agt atg gat cac cca     2304
Val Glu Phe Met Asp Glu Ala Leu Ile Met Ala Ser Met Asp His Pro
        755                 760                 765
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cac cta gtt cgc cta ttg gga gtg tgt ctg agt ccc act atc cag ttg     2352
His Leu Val Arg Leu Leu Gly Val Cys Leu Ser Pro Thr Ile Gln Leu
    770                 775                 780

gtt acg cag ctg atg ccg cat ggc tgc cta ctg gac tat gtt cat gaa     2400
Val Thr Gln Leu Met Pro His Gly Cys Leu Leu Asp Tyr Val His Glu
785                 790                 795                 800

cac aag gat aac att gga tca cag ctg ctg ttg aac tgg tgt gtc cag     2448
His Lys Asp Asn Ile Gly Ser Gln Leu Leu Leu Asn Trp Cys Val Gln
                805                 810                 815

att gct aag gga atg atg tac cta gaa gaa aga cgg ctt gtt cat cgg     2496
Ile Ala Lys Gly Met Met Tyr Leu Glu Glu Arg Arg Leu Val His Arg
            820                 825                 830

gat ctg gca gcc cgc aat gtc tta gtg aaa tct cca aat cat gtt aaa     2544
Asp Leu Ala Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys
        835                 840                 845

atc aca gat ttt gga ctg gcc cgg ctc ttg gaa gga gat gaa aaa gaa     2592
Ile Thr Asp Phe Gly Leu Ala Arg Leu Leu Glu Gly Asp Glu Lys Glu
    850                 855                 860

tac aat gct gat ggt ggc aag atg cca att aaa tgg atg gct ctg gaa     2640
Tyr Asn Ala Asp Gly Gly Lys Met Pro Ile Lys Trp Met Ala Leu Glu
865                 870                 875                 880

tgt ata cat tat agg aaa ttc aca cat caa agt gat gtt tgg agc tat     2688
Cys Ile His Tyr Arg Lys Phe Thr His Gln Ser Asp Val Trp Ser Tyr
                885                 890                 895

ggc gtc act ata tgg gaa ctg atg acc ttt gga gga aag ccc tat gat     2736
Gly Val Thr Ile Trp Glu Leu Met Thr Phe Gly Gly Lys Pro Tyr Asp
            900                 905                 910

gga att cca acc cga gaa atc ccc gat tta ctg gag aaa gga gag cgt     2784
Gly Ile Pro Thr Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg
        915                 920                 925

ctg cct cag cct ccc atc tgc act att gat gtt tac atg gtc atg gtc     2832
Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Val Met Val
    930                 935                 940

aaa tgt tgg atg atc gat gct gac agc aga cct aaa ttc aaa gaa ctg     2880
Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Lys Glu Leu
945                 950                 955                 960

gct gct gag ttt tca aga atg gct aga gac cct caa aga tac cta gtt     2928
Ala Ala Glu Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Tyr Leu Val
                965                 970                 975

att cag ggt gat gat cgt atg aag ctt ccc agt cca aat gac agc aaa     2976
Ile Gln Gly Asp Asp Arg Met Lys Leu Pro Ser Pro Asn Asp Ser Lys
            980                 985                 990

ttc ttc cag aat ctc ttg gat gaa  gag gat ttg gaa gac  atg atg gat   3024
Phe Phe Gln Asn Leu Leu Asp Glu  Glu Asp Leu Glu Asp  Met Met Asp
        995                 1000                1005
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gct gag  gaa tat ttg gtc ccc  cag gct ttc aac ata  cct cct ccc      3069
Ala Glu  Glu Tyr Leu Val Pro  Gln Ala Phe Asn Ile  Pro Pro Pro
    1010                 1015                 1020

atc tac  aca tcc aga aca aga  att gac tcc aat agg  agt gaa att      3114
Ile Tyr  Thr Ser Arg Thr Arg  Ile Asp Ser Asn Arg  Ser Glu Ile
    1025                 1030                 1035

gga cac  agc cct cct cct gcc  tac acc ccc atg tcg  gga aat cag      3159
Gly His  Ser Pro Pro Pro Ala  Tyr Thr Pro Met Ser  Gly Asn Gln
    1040                 1045                 1050

ttt gtg  tac caa gat ggg ggc  ttt gct aca caa caa  gga atg ccc      3204
Phe Val  Tyr Gln Asp Gly Gly  Phe Ala Thr Gln Gln  Gly Met Pro
    1055                 1060                 1065

atg ccc  tac aga gcc aca acc  agc acc ata cca gag  gct cca gta      3249
Met Pro  Tyr Arg Ala Thr Thr  Ser Thr Ile Pro Glu  Ala Pro Val
    1070                 1075                 1080

gct cag  ggt gca acg gct gag  atg ttt gat gac tcc  tgc tgt aat      3294
Ala Gln  Gly Ala Thr Ala Glu  Met Phe Asp Asp Ser  Cys Cys Asn
    1085                 1090                 1095

ggt acc  cta cga aag cca gtg  gca ccc cat gtc caa  gag gac agt      3339
Gly Thr  Leu Arg Lys Pro Val  Ala Pro His Val Gln  Glu Asp Ser
    1100                 1105                 1110

agc act  cag agg tat agt gct  gat ccc aca gtg ttc  gcc cca gaa      3384
Ser Thr  Gln Arg Tyr Ser Ala  Asp Pro Thr Val Phe  Ala Pro Glu
    1115                 1120                 1125

cgg aat  cct cga gga gaa ctg  gat gaa gaa ggc tac  atg act cca      3429
Arg Asn  Pro Arg Gly Glu Leu  Asp Glu Glu Gly Tyr  Met Thr Pro
    1130                 1135                 1140

atg cat  gac aag ccc aaa caa  gaa tat ctg aat cct  gtg gaa gag      3474
Met His  Asp Lys Pro Lys Gln  Glu Tyr Leu Asn Pro  Val Glu Glu
    1145                 1150                 1155

aac cct  ttt gtg tcc cga agg  aag aat gga gat ctt  caa gct tta      3519
Asn Pro  Phe Val Ser Arg Arg  Lys Asn Gly Asp Leu  Gln Ala Leu
    1160                 1165                 1170

gat aat  ccg gag tat cac agt  gct tcc agc ggt cca  ccc aag gcg      3564
Asp Asn  Pro Glu Tyr His Ser  Ala Ser Ser Gly Pro  Pro Lys Ala
    1175                 1180                 1185

gag gat  gaa tac gtg aat gag  cct cta tac ctc aac  acc ttc gcc      3609
Glu Asp  Glu Tyr Val Asn Glu  Pro Leu Tyr Leu Asn  Thr Phe Ala
    1190                 1195                 1200

aat gcc  ttg ggg agt gca gag  tac atg aaa aac agt  gta ctg tct      3654
Asn Ala  Leu Gly Ser Ala Glu  Tyr Met Lys Asn Ser  Val Leu Ser
    1205                 1210                 1215

gtg cca  gag aaa gcc aag aaa  gca ttt gac aac ccc  gac tac tgg      3699
Val Pro  Glu Lys Ala Lys Lys  Ala Phe Asp Asn Pro  Asp Tyr Trp
    1220                 1225                 1230
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aac cac  agc ctg cca ccc cgg  agc acc ctt cag cac  cca gac tac      3744
Asn His  Ser Leu Pro Pro Arg  Ser Thr Leu Gln His  Pro Asp Tyr
    1235                 1240                 1245

ctg cag  gaa tac agc aca aaa  tat ttt tat aaa cag  aat gga cgg      3789
Leu Gln  Glu Tyr Ser Thr Lys  Tyr Phe Tyr Lys Gln  Asn Gly Arg
    1250                 1255                 1260

atc cgc  ccc att gtg gca gag  aat cct gag tac ctc  tcg gag ttc      3834
Ile Arg  Pro Ile Val Ala Glu  Asn Pro Glu Tyr Leu  Ser Glu Phe
    1265                 1270                 1275

tcg ctg  aag cct ggc act atg  ctg ccc cct ccg ccc  tac aga cac      3879
Ser Leu  Lys Pro Gly Thr Met  Leu Pro Pro Pro Pro  Tyr Arg His
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cgg aat  act gtg gtg tga                                         3897
Arg Asn  Thr Val Val
    1295
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<211> 1298
<212> PRT
<213> Mus musculus

<400> 21

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Met Ala Ile Pro Ser Arg Arg Lys Asp Tyr Pro Lys Leu Ser Glu Ile
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Thr Val Cys Ala Gly Thr Glu Asn Lys Leu Ser Ser Leu Ser Asp Leu
            20                  25                  30

Glu Gln Gln Tyr Arg Ala Leu Arg Lys Tyr Tyr Glu Asn Cys Glu Val
        35                  40                  45

Val Met Gly Asn Leu Glu Ile Thr Ser Ile Glu His Asn Arg Asp Leu
    50                  55                  60

Ser Phe Leu Arg Ser Ile Arg Glu Val Thr Gly Tyr Val Leu Val Ala
65                  70                  75                  80

Leu Asn Gln Phe Arg Tyr Leu Pro Leu Glu Asn Leu Arg Ile Ile Arg
                85                  90                  95

Gly Thr Lys Leu Tyr Glu Asp Arg Tyr Ala Leu Ala Ile Phe Leu Asn
            100                 105                 110

Tyr Arg Lys Asp Gly Asn Phe Gly Leu Gln Glu Leu Gly Leu Lys Asn
        115                 120                 125
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Leu Thr Glu Ile Leu Asn Gly Gly Val Tyr Val Asp Gln Asn Lys Phe
    130                 135                 140

Leu Cys Tyr Ala Asp Thr Ile His Trp Gln Asp Ile Val Arg Asn Pro
145                 150                 155                 160

Trp Pro Ser Asn Met Thr Leu Val Ser Thr Asn Gly Ser Ser Gly Cys
                165                 170                 175

Gly Arg Cys His Lys Ser Cys Thr Gly Arg Cys Trp Gly Pro Thr Glu
            180                 185                 190

Asn His Cys Gln Thr Leu Thr Arg Thr Val Cys Ala Glu Gln Cys Asp
        195                 200                 205

Gly Arg Cys Tyr Gly Pro Tyr Val Ser Asp Cys Cys His Arg Glu Cys
    210                 215                 220

Ala Gly Gly Cys Ser Gly Pro Lys Asp Thr Asp Cys Phe Ala Cys Met
225                 230                 235                 240

Asn Phe Asn Asp Ser Gly Ala Cys Val Thr Gln Cys Pro Gln Thr Phe
                245                 250                 255

Val Tyr Asn Pro Thr Thr Phe Gln Leu Glu His Asn Phe Asn Ala Lys
            260                 265                 270

Tyr Thr Tyr Gly Ala Phe Cys Val Lys Lys Cys Pro His Asn Phe Val
        275                 280                 285

Val Asp Ser Ser Ser Cys Val Arg Ala Cys Pro Ser Ser Lys Met Glu
    290                 295                 300

Val Glu Glu Asn Gly Ile Lys Met Cys Lys Pro Cys Thr Asp Ile Cys
305                 310                 315                 320

Pro Lys Ala Cys Asp Gly Ile Gly Thr Gly Ser Leu Met Ser Ala Gln
                325                 330                 335

Thr Val Asp Ser Ser Asn Ile Asp Lys Phe Ile Asn Cys Thr Lys Ile
            340                 345                 350

Asn Gly Asn Leu Ile Phe Leu Val Thr Gly Ile His Gly Asp Pro Tyr
        355                 360                 365
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Asn Ala Ile Asp Ala Ile Asp Pro Glu Lys Leu Asn Val Phe Arg Thr
    370                 375                 380

Val Arg Glu Ile Thr Gly Phe Leu Asn Ile Gln Ser Trp Pro Pro Asn
385                 390                 395                 400

Met Thr Asp Phe Ser Val Phe Ser Asn Leu Val Thr Ile Gly Gly Arg
                405                 410                 415

Val Leu Tyr Ser Gly Leu Ser Leu Leu Ile Leu Lys Gln Gln Gly Ile
            420                 425                 430

Thr Ser Leu Gln Phe Gln Ser Leu Lys Glu Ile Ser Ala Gly Asn Ile
        435                 440                 445

Tyr Ile Thr Asp Asn Ser Asn Leu Cys Tyr Tyr His Thr Ile Asn Trp
    450                 455                 460

Thr Thr Leu Phe Ser Thr Ile Asn Gln Arg Ile Val Ile Arg Asp Asn
465                 470                 475                 480

Arg Arg Ala Glu Asn Cys Thr Ala Glu Gly Met Val Cys Asn His Leu
                485                 490                 495

Cys Ser Asn Asp Gly Cys Trp Gly Pro Gly Pro Asp Gln Cys Leu Ser
            500                 505                 510

Cys Arg Arg Phe Ser Arg Gly Lys Ile Cys Ile Glu Ser Cys Asn Leu
        515                 520                 525

Tyr Asp Gly Glu Phe Arg Glu Phe Glu Asn Gly Ser Ile Cys Val Glu
    530                 535                 540

Cys Asp Ser Gln Cys Glu Lys Met Glu Asp Gly Leu Leu Thr Cys His
545                 550                 555                 560

Gly Pro Gly Pro Asp Asn Cys Thr Lys Cys Ser His Phe Lys Asp Gly
                565                 570                 575

Pro Asn Cys Val Glu Lys Cys Pro Asp Gly Leu Gln Gly Ala Asn Ser
            580                 585                 590

Phe Ile Phe Lys Tyr Ala Asp Gln Asp Arg Glu Cys His Pro Cys His
        595                 600                 605
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Pro Asn Cys Thr Gln Gly Cys Asn Gly Pro Thr Ser His Asp Cys Ile
    610                 615                 620

Tyr Tyr Pro Trp Thr Gly His Ser Thr Leu Pro Gln His Ala Arg Thr
625                 630                 635                 640

Pro Leu Ile Ala Ala Gly Val Ile Gly Gly Leu Phe Ile Leu Val Ile
                645                 650                 655

Met Ala Leu Thr Phe Ala Val Tyr Val Arg Arg Lys Ser Ile Lys Lys
            660                 665                 670

Lys Arg Ala Leu Arg Arg Phe Leu Glu Thr Glu Leu Val Glu Pro Leu
        675                 680                 685

Thr Pro Ser Gly Thr Ala Pro Asn Gln Ala Gln Leu Arg Ile Leu Lys
    690                 695                 700

Glu Thr Glu Leu Lys Arg Val Lys Val Leu Gly Ser Gly Ala Phe Gly
705                 710                 715                 720

Thr Val Tyr Lys Gly Ile Trp Val Pro Glu Gly Glu Thr Val Lys Ile
                725                 730                 735

Pro Val Ala Ile Lys Ile Leu Asn Glu Thr Thr Gly Pro Lys Ala Asn
            740                 745                 750

Val Glu Phe Met Asp Glu Ala Leu Ile Met Ala Ser Met Asp His Pro
        755                 760                 765

His Leu Val Arg Leu Leu Gly Val Cys Leu Ser Pro Thr Ile Gln Leu
    770                 775                 780

Val Thr Gln Leu Met Pro His Gly Cys Leu Leu Asp Tyr Val His Glu
785                 790                 795                 800

His Lys Asp Asn Ile Gly Ser Gln Leu Leu Leu Asn Trp Cys Val Gln
                805                 810                 815

Ile Ala Lys Gly Met Met Tyr Leu Glu Glu Arg Arg Leu Val His Arg
            820                 825                 830

Asp Leu Ala Ala Arg Asn Val Leu Val Lys Ser Pro Asn His Val Lys
        835                 840                 845
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Ile Thr Asp Phe Gly Leu Ala Arg Leu Leu Glu Gly Asp Glu Lys Glu
    850                 855                 860

Tyr Asn Ala Asp Gly Gly Lys Met Pro Ile Lys Trp Met Ala Leu Glu
865                 870                 875                 880

Cys Ile His Tyr Arg Lys Phe Thr His Gln Ser Asp Val Trp Ser Tyr
                885                 890                 895

Gly Val Thr Ile Trp Glu Leu Met Thr Phe Gly Gly Lys Pro Tyr Asp
            900                 905                 910

Gly Ile Pro Thr Arg Glu Ile Pro Asp Leu Leu Glu Lys Gly Glu Arg
        915                 920                 925

Leu Pro Gln Pro Pro Ile Cys Thr Ile Asp Val Tyr Met Val Met Val
    930                 935                 940

Lys Cys Trp Met Ile Asp Ala Asp Ser Arg Pro Lys Phe Lys Glu Leu
945                 950                 955                 960

Ala Ala Glu Phe Ser Arg Met Ala Arg Asp Pro Gln Arg Tyr Leu Val
                965                 970                 975

Ile Gln Gly Asp Asp Arg Met Lys Leu Pro Ser Pro Asn Asp Ser Lys
            980                 985                 990

Phe Phe Gln Asn Leu Leu Asp Glu  Glu Asp Leu Glu Asp  Met Met Asp
        995                 1000                1005

Ala Glu  Glu Tyr Leu Val Pro  Gln Ala Phe Asn Ile  Pro Pro Pro
    1010                1015                1020

Ile Tyr  Thr Ser Arg Thr Arg  Ile Asp Ser Asn Arg  Ser Glu Ile
    1025                1030                1035

Gly His  Ser Pro Pro Pro Ala  Tyr Thr Pro Met Ser  Gly Asn Gln
    1040                1045                1050

Phe Val  Tyr Gln Asp Gly Gly  Phe Ala Thr Gln Gln  Gly Met Pro
    1055                1060                1065

Met Pro  Tyr Arg Ala Thr Thr  Ser Thr Ile Pro Glu  Ala Pro Val
    1070                1075                1080
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Ala Gln Gly Ala Thr Ala Glu Met Phe Asp Asp Ser Cys Cys Asn
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Gly Thr Leu Arg Lys Pro Val Ala Pro His Val Gln Glu Asp Ser
1100 1105 1110

Ser Thr Gln Arg Tyr Ser Ala Asp Pro Thr Val Phe Ala Pro Glu
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Arg Asn Pro Arg Gly Glu Leu Asp Glu Glu Gly Tyr Met Thr Pro
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Met His Asp Lys Pro Lys Gln Glu Tyr Leu Asn Pro Val Glu Glu
1145 1150 1155

Asn Pro Phe Val Ser Arg Arg Lys Asn Gly Asp Leu Gln Ala Leu
1160 1165 1170

Asp Asn Pro Glu Tyr His Ser Ala Ser Ser Gly Pro Pro Lys Ala
1175 1180 1185

Glu Asp Glu Tyr Val Asn Glu Pro Leu Tyr Leu Asn Thr Phe Ala
1190 1195 1200

Asn Ala Leu Gly Ser Ala Glu Tyr Met Lys Asn Ser Val Leu Ser
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Val Pro Glu Lys Ala Lys Lys Ala Phe Asp Asn Pro Asp Tyr Trp
1220 1225 1230

Asn His Ser Leu Pro Pro Arg Ser Thr Leu Gln His Pro Asp Tyr
1235 1240 1245

Leu Gln Glu Tyr Ser Thr Lys Tyr Phe Tyr Lys Gln Asn Gly Arg
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Ile Arg Pro Ile Val Ala Glu Asn Pro Glu Tyr Leu Ser Glu Phe
1265 1270 1275

Ser Leu Lys Pro Gly Thr Met Leu Pro Pro Pro Pro Tyr Arg His
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Arg Asn Thr Val Val
1295